PIGULEVSKIY, G.V.

Studies on vegetable substances. Vest.Len.un.9 no.5:157-165 My '54.
(Botanical chemistry) (Plants--Chemical analysis) (MLRA 9:7)

PIGULEVSKIY, G.V.

USSR

Ultraviolet spectra of some natural coumarins. G. V. Pigulevskii and O. A. Kuznetsova. *Zhur. Obshchei Khim.* 24, 2174-7(1954).--Umbelliferone in EtOH shows an absorption band at 3500-2300 A., with max. at 3205 A. and a smaller one at 2520 A. 8-(3-Methyl-2-butenyl)-herniarin (*cf. C.A.* 43, 3416b) shows abs. max. 3220 A. and 2585 A. 4-(2,3-Epoxy-3-methylbutoxy)-7*H*-furo[3,2-*g*][1]benzopyran-7-one (I) shows abs. max. 3000, 2660, and 2495 A. 8-Hydroxy-7*H*-furo[3,2-*g*][1]benzopyran-7-one shows abs. max. 3155, 2650, and 2470 A. This substance, m. 174-5°, isolated along with the above from *Prangos tabularis* (*C.A.* 47, 12341*f*) shows abs. max. 2950 and 2515 A., which suggests similarity in structure to I. G. M. [illegible]

Botanical Inst. im. Komarov, AS USSR

PIGULEVSKIY, G.V.

Essential oil of carrot (Daucus carota). G. V. Pigulevskiĭ and V. I. Kovaleva. *Trudy Botan. Inst. im. V. L. Komarova Akad. Nauk S.S.S.R.* 5, No. 5, 7-20(1955); cf. *C.A.* 50, 5988i.—The seeds of *D. carota*, collected in North Caucasus, contain 2% of an essential oil, d_4^{20} 0.8943, n_D^{20} 1.4650, ω_D −22.51°, sapon. equiv. 180.60, hydroxyl no. 0.18. The oil contains the following compds.: 20% *l-sabinene*, b_{10} 50–1°, d_4^{20} 0.8495, n_D^{20} 1.4678, $[\alpha]_D$ −80.92° (the high rotation is attributed to high optical purity of the sample); 30% *geraniol* (mostly as its acetate), b_{11} 115–16°, d_4^{20} 0.8826, n_D^{20} 1.4772, $[\alpha]_D$ 0°; 7.7% of a bicyclic unsatd. *compd.* $C_{15}H_{24}$ (I), b_4 110–12°, d_4^{20} 0.8881, n_D^{20} 1.4929, yielding azulenic material on dehydrogenation with Se (*picrate* of the azulene m. 110°); a satd. *compd.* $C_{15}H_{28}$ (II), m. 6°–7.5° and a *compd.* $C_{15}H_{26}O$, m. 120°. Another sample of the essential oil of the wild carrot seeds of a probably different botanical form had the consts.: d_4^{20} 0.9110, n_D^{20} 1.4670, $[\alpha]_D$ −4.54°, sapon. equiv. 218.62, hydroxyl no. 0.8. It contained the following compds.: 47–52% *geraniol*, as its acetate; 4.3% of two terpenes one of which is apparently *nopinene*, the other probably *sabinene*; a *compd.* $C_{15}H_{24}$, b_5 123°, n_D^{20} 1.4930, d_4^{20} 0.8881, probably identical with I; a *compd.* $C_{15}H_{24}$, b_5 92–3°, d_4^{20} 0.8785, n_D^{20} 1.4801, $[\alpha]_D$ +3.85°; and a *compd.* $C_{15}H_{28}$, probably identical with II.

R. Dowbenko

PIGULEVSKIY, G.V.

Resin from the roots of Ferula gumosa. G. V. Pigulevskii and T. N. Naugol'naya. *Trudy Botan. Inst. im. V. L. Komarova, Akad. Nauk S.S.S.R.* 5, No. 5, 80–4(1955).—The resin from the roots of *F. gumosa* (collected in the Soviet Middle Asia) contains an acid $C_{21}H_{20}O_5$ (I), m. 92–3°, $[\alpha]_D^{20}$ −35.2°, ethyl ester m. 81–2°, $[\alpha]_D^{20}$ −37.7°, probably a deriv. of coumarin. On hydrogenation I absorbs 4 moles H yielding an acid $C_{21}H_{28}O_5$, $[\alpha]_D^{20}$ −44.6°. On dehydrogenation with Se I gives a compd. m. 229.5–30.5°, apparently umbelliferone. R. Dowbenko

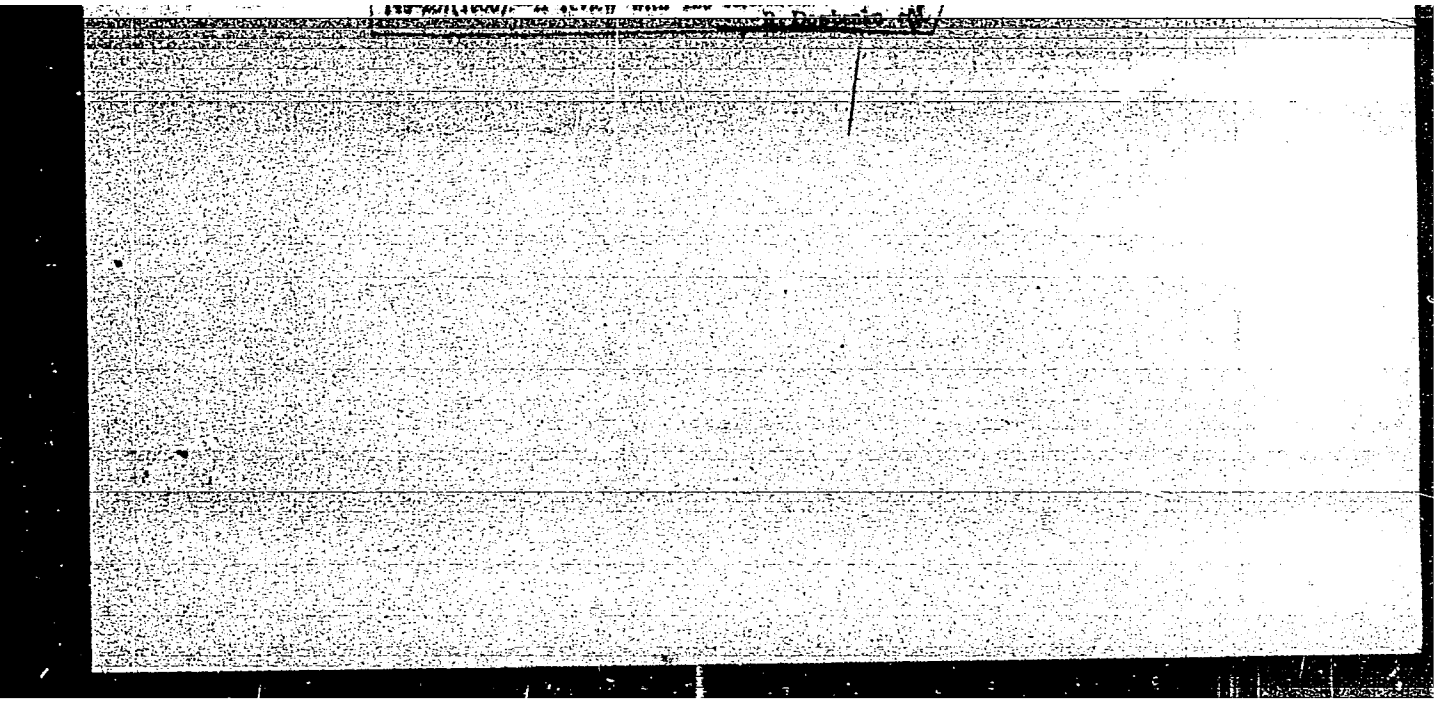
PIGULEVSKIY, G.V.

Optical forms of terpenes. Trudy Bot.inst.Ser.5 no.5:120-148 '55. (MLRA 9:5)

(Terpenes--Optical properties)

PIGULEVSKIY, G.V.

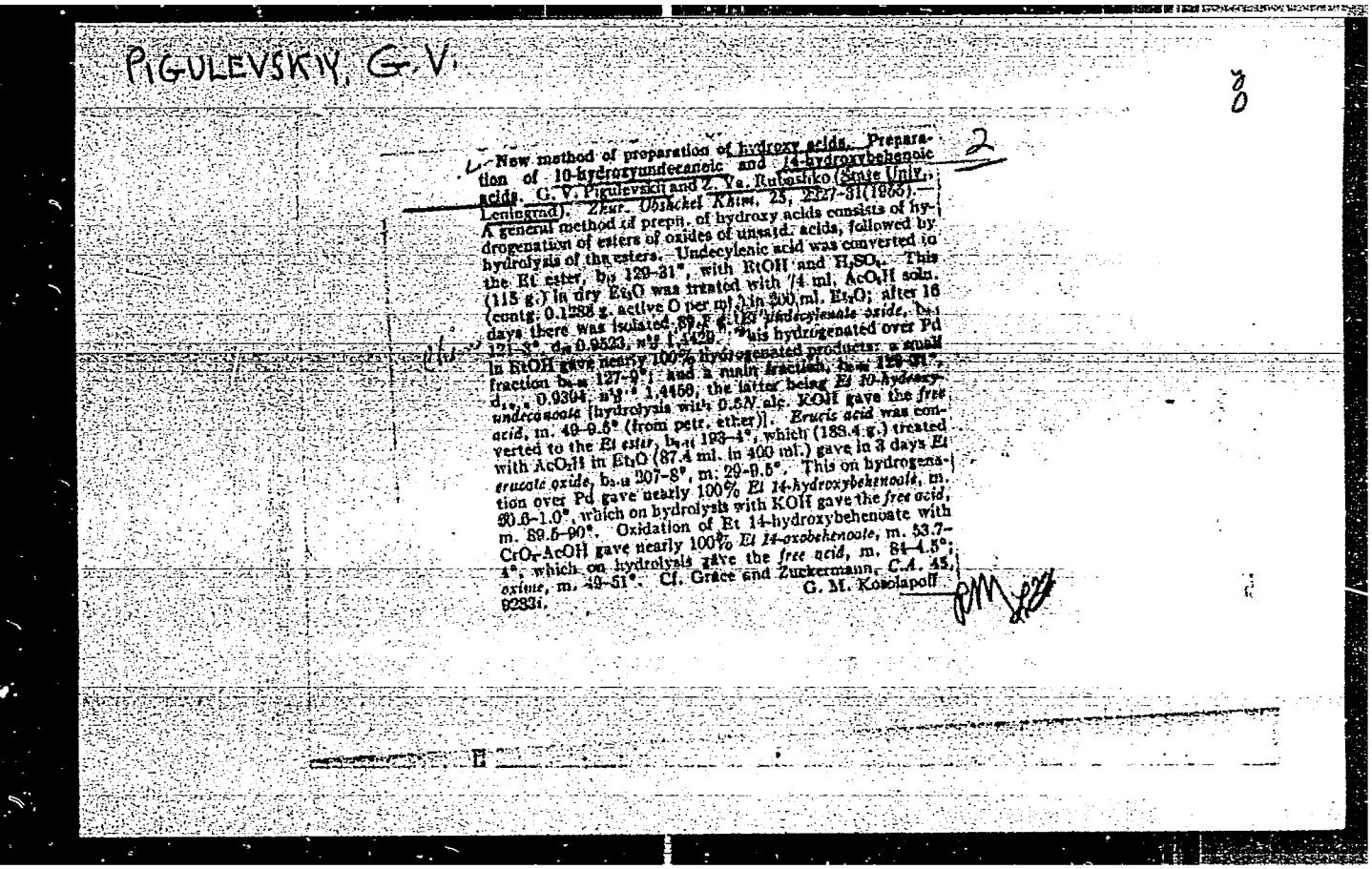
Raman spectra of compounds occurring in essential oils. V. G. V. Pigulevskii and A. T. Kyskal'chuk. *Trudy Bota.* No. 5 [illegible] 2



APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012408

PIGULEVSKIY, G.V.

Hydrocarbon isolimonene, G. V. Pigulevskii and I. S. Kozhina (Leningrad State Univ.). *Zhur. Obshchei Khim.*, 25, 416-22(1955).—Dehydration of *dihydrocarveol*, b_{11} 106-7°, d_{20} 0.9200, n_D^{20} 1.4793, $[\alpha]_D^{20}$ 20.03°, according to Chugaev gave a mixt. of hydrocarbons which were freed of S by heating with Na, steam distg., shaking with Hg, and redistg. over Na, giving after repeated fractionation a specimen of pure *isolimonene* (I), b_{11} 56–6.5°, d_{20} 0.8320, n_D^{20} 1.4662, $[\alpha]_D$ −148.9°, $[\alpha]_C$ −113.1°, $[\alpha]_E$ −191.5°, $[\alpha]_F$ −235.0°, and a specimen of limonene, b_{11} 63–3.5°, d_{20} 0.8448, n_D^{20} 1.4725, $[\alpha]_D$ −123.7°. The Raman spectrum of I is 584(0.5), 695(1.5), 725(0.5), 772(0.5), 827(0.5), 884(0.5), 938(0.5), 964(0.5), 1014(0.5), 1072(1), 1102(1), 1149(2), 1217(2), 1282(3), 1329(3), 1366(2), 1390(3), 1429–54(4), 1641(5). That of limonene is: 470(0.5), 495(0.5), 524(0.5), 544(0.5), 639(0.5), 703(1), 760(4), 795(2), 888(2), 918(1), 958(0.5), 1019(0.5), 1051(0.5), 1082(1), 1112(0.5), 1155(2), 1200(1), 1283(0.5), 1308(0.5), 1370(3), 1431(4), 1467(4), 1643(5), 1676(5). I failed to yield a solid tetrabromide or nitrosochloride. Its oxidation with aq. $KMnO_4$ gave a liquid oxo acid $C_9H_{14}O_3$, whose semicarbazone m. 221–2°; the Ag salt was analyzed. I with dry HCl in AcOH gave an oily *dihydrochloride*, $[\alpha]_D^{20}$ −25°; the *dihydrobromide* is also an oil, $[\alpha]_D^{20}$ −11.6°. Cleavage of HCl from the former by heating with $PhNH_2$ gave a product b_{11} 50–50.5°, d_{20} 0.837, n_D^{20} 1.4739, $[\alpha]_D^{20}$ 9.1°, which also failed to give a solid tetrabromide. I with Br_2O_2H gave a *dioxide*, $C_{10}H_{16}O_2$, b_{11} 129-9.5°, d_{20} 1.0237, d_{20} 1.0231, n_D^{20} 1.4703, $[\alpha]_D^{20}$ −37.5°, $[\alpha]_C$ −29.28°, $[\alpha]_E$ −47.22°, $[\alpha]_F$ −58.08°. This heated 4 hrs. with H_2O acidified with H_2SO_4 gave a glycol, $C_8H_{14}(OH)_2$, a glassy mass. Hydrogenation of I over Pt black gave a satd. product, $C_{10}H_{20}$, b_{760} 165–6°, n_D^{20} 1.4434, $[\alpha]_D$ 0°. Thus I is *2,8(9)-p-menthadiene*. *Limonene* forms a *dioxide*, b_{11} 111–13°, d_{20} 1.0287, n_D^{20} 1.4600, $[\alpha]_D$ −55.92°, $[\alpha]_C$ −44.76, $[\alpha]_E$ −66.91, $[\alpha]_F$ −88.53. G. M. Kosolapoff



PIGULEVSKIY, G.V.

New method of preparation of hydroxy acids. Preparation of 10-hydroxyundecanoic and 14-hydroxybehenic acids. G. V. Pigulevskii and Z. Ya. Rubashko (State Univ., Leningrad). *Zhur. Obshchei Khim.*, 25, 2327-31(1955).—A general method of prepn. of hydroxy acids consists of hydrogenation of esters of oxides of unsatd. acids, followed by hydrolysis of the esters. Undecylenic acid was converted to the Et ester, bp 129–31°, with RtOH and H_2SO_4. This (115 g.) in dry Et_2O was treated with 74 ml. AcO_2H soln. (contg. 0.1288 g. active O per ml.) in 500 ml. Et_2O; after 16 days there was isolated 89.5 g. *Et undecylenate oxide*, bp 121–3°, d_{20} 0.9523, n_D^{20} 1.4429. This hydrogenated over Pd in RtOH gave nearly 100% hydrogenated products: a small fraction bp 127–9°, and a main fraction, bp 129–31°, d_{20} 0.9304, n_D^{20} 1.4456, the latter being *Et 10-hydroxyundecanoate* [hydrolysis with 0.5*N* alc. KOH gave the *free acid*, m. 49–9.5° (from petr. ether)]. *Erucic acid* was converted to the *Et ester*, bp 193–4°, which (188.4 g.) treated with AcO_2H in Et_2O (87.4 ml. in 400 ml.) gave in 3 days *Et erucate oxide*, bp 207–8°, m. 29–9.5°. This on hydrogenation over Pd gave nearly 100% *Et 14-hydroxybehenoate*, m. 90.5–1.0°, which on hydrolysis with KOH gave the *free acid*, m. 89.5–90°. Oxidation of Et 14-hydroxybehenoate with CrO_3-AcOH gave nearly 100% *Et 14-oxobehenoate*, m. 53.7–4°, which on hydrolysis gave the *free acid*, m. 84–4.5°; *oxime*, m. 49–51°. Cf. Grace and Zuckermann, *C.A.* 45, 9283i.

G. M. Kosolapoff

AID P - 2269

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 14/19

Authors : Pigulevskiy, G. V. and I. L. Kuranova

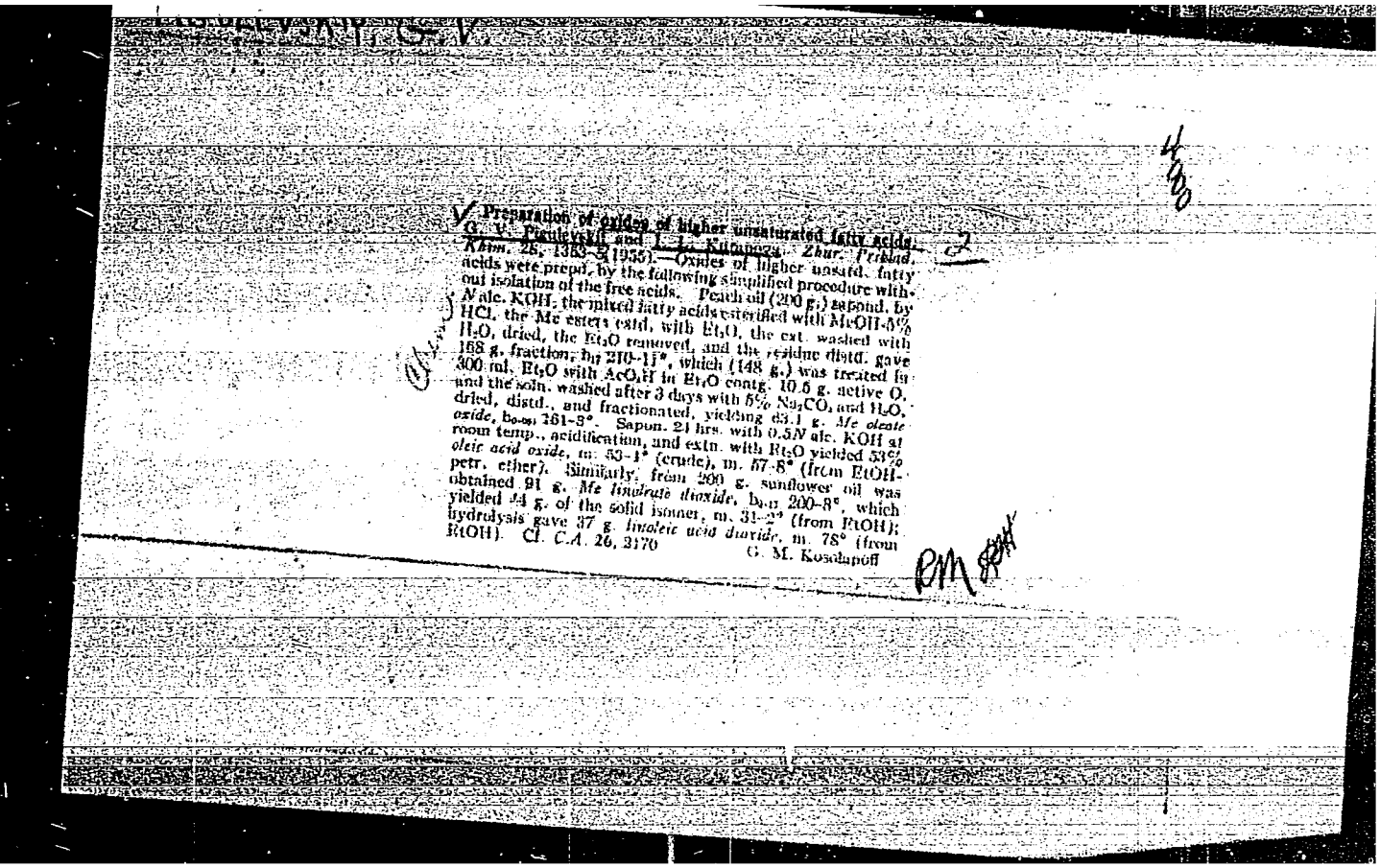
Title : A new method for determination of the structure of hydroxyamino acids

Periodical: Zhur. prikl. khim., 28, no.2, 213-216, 1955

Abstract : Aminohydroxystearic acid was oxidized with lead tetra-acetate. The analysis of the oxidation products led to the assumption that the structure of the acid corresponds to 9-amino-10-hydroxystearic acid. Five references (2 Russian: 1950-1952).

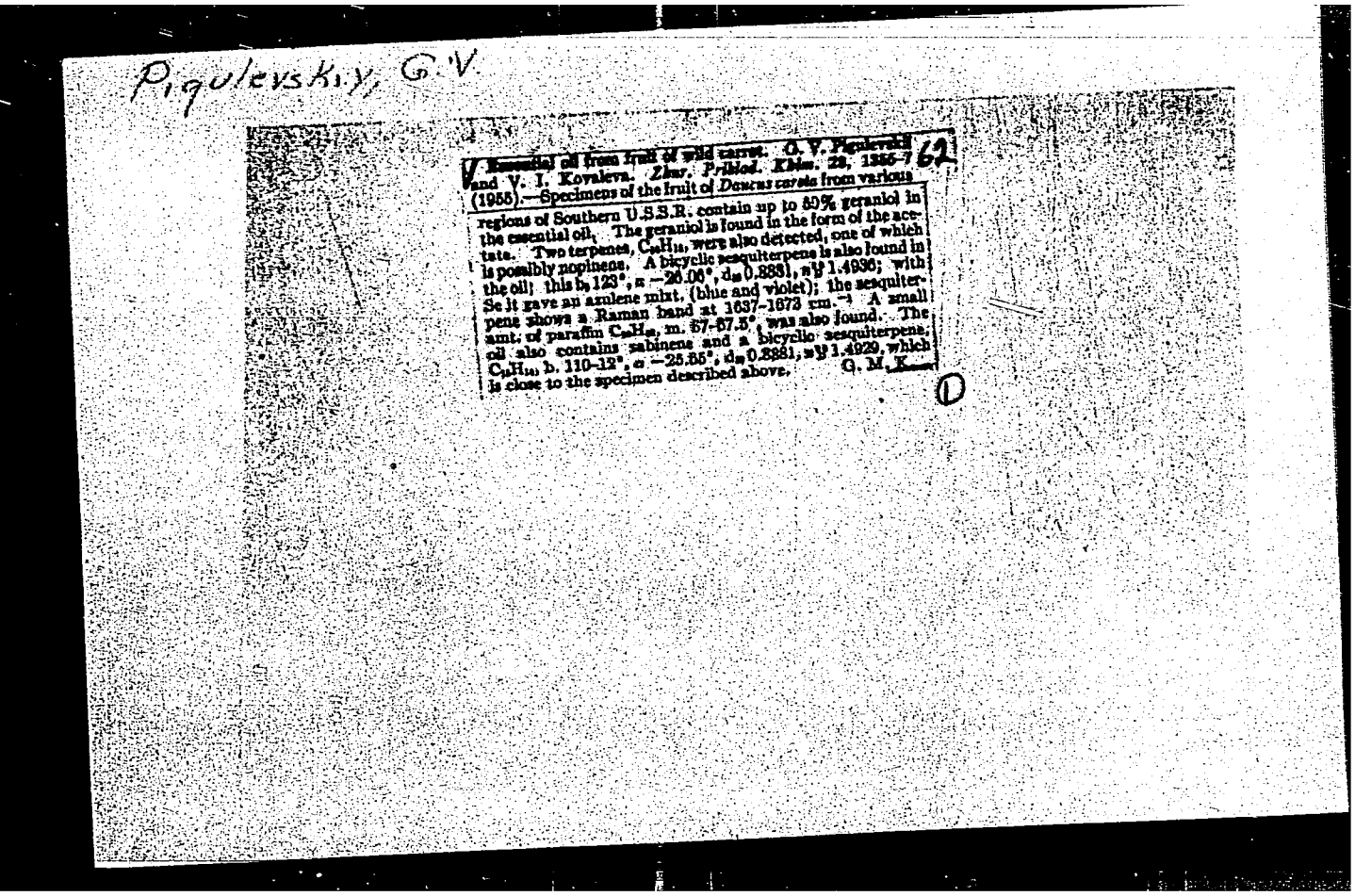
Institution: None

Submitted : My 3, 1954



Preparation of oxides of higher unsaturated fatty acids. G. V. Pigulevskiĭ and L. L. Kitaĭgora. *Zhur. Prikład. Khim.* 28, 1383–5 (1955).—Oxides of higher unsatd. fatty acids were prepd. by the following simplified procedure without isolation of the free acids. Peach oil (200 g.) sapond. by *N* alc. KOH, the mixed fatty acids esterified with MeOH-5% HCl, the Me esters cold, with Et_2O, the ext. washed with H_2O, dried, the Et_2O removed, and the residue distd. gave 168 g. fraction, b_{12} 210–11°, which (148 g.) was treated in 300 ml. Et_2O with AcO_2H in Et_2O contg. 10.5 g. active O, and the soln. washed after 3 days with 5% Na_2CO_3 and H_2O, dried, distd., and fractionated, yielding 63.1 g. *Me oleate oxide*, $b_{0.05}$ 161–3°. Sapon. 24 hrs. with 0.5*N* alc. KOH at room temp., acidification, and extn. with Et_2O yielded 53% *oleic acid oxide*, m. 53–4° (crude), m. 57–8° (from EtOH–petr. ether). Similarly, from 200 g. sunflower oil was obtained 91 g. *Me linolate dioxide*, $b_{0.1}$ 200–8°, which yielded 54 g. of the solid isomer, m. 31–2° (from EtOH); hydrolysis gave 37 g. *linoleic acid dioxide*, m. 78° (from EtOH). Cf. *C.A.* 26, 3170

G. M. Kosolapoff



Piguevskiy, G.V.

Essential oil from fruit of wild carrot. G. V. Pigulevskii and V. I. Kovaleva. *Zhur. Prikhod. Khim.* 28, 1356-7 (1955).—Specimens of the fruit of *Daucus carota* from various regions of Southern U.S.S.R. contain up to 80% geraniol in the essential oil. The geraniol is found in the form of the acetate. Two terpenes, $C_{10}H_{16}$, were also detected, one of which is possibly sopinene. A bicyclic sesquiterpene is also found in the oil; this is, 123°, n −26.00°, d_4^{20} 0.8881, n_D^{20} 1.4936; with SeO_2 it gave an azulene mixt. (blue and violet); the sesquiterpene shows a Raman band at 1637–1673 cm.$^{-1}$. A small amt. of paraffin $C_{25}H_{52}$, m. 57–57.5°, was also found. The oil also contains sabinene and a bicyclic sesquiterpene, $C_{15}H_{24}$, b. 110–12°, α −25.55°, d_4^{20} 0.8881, n_D^{20} 1.4929, which is close to the specimen described above. G. M. K.

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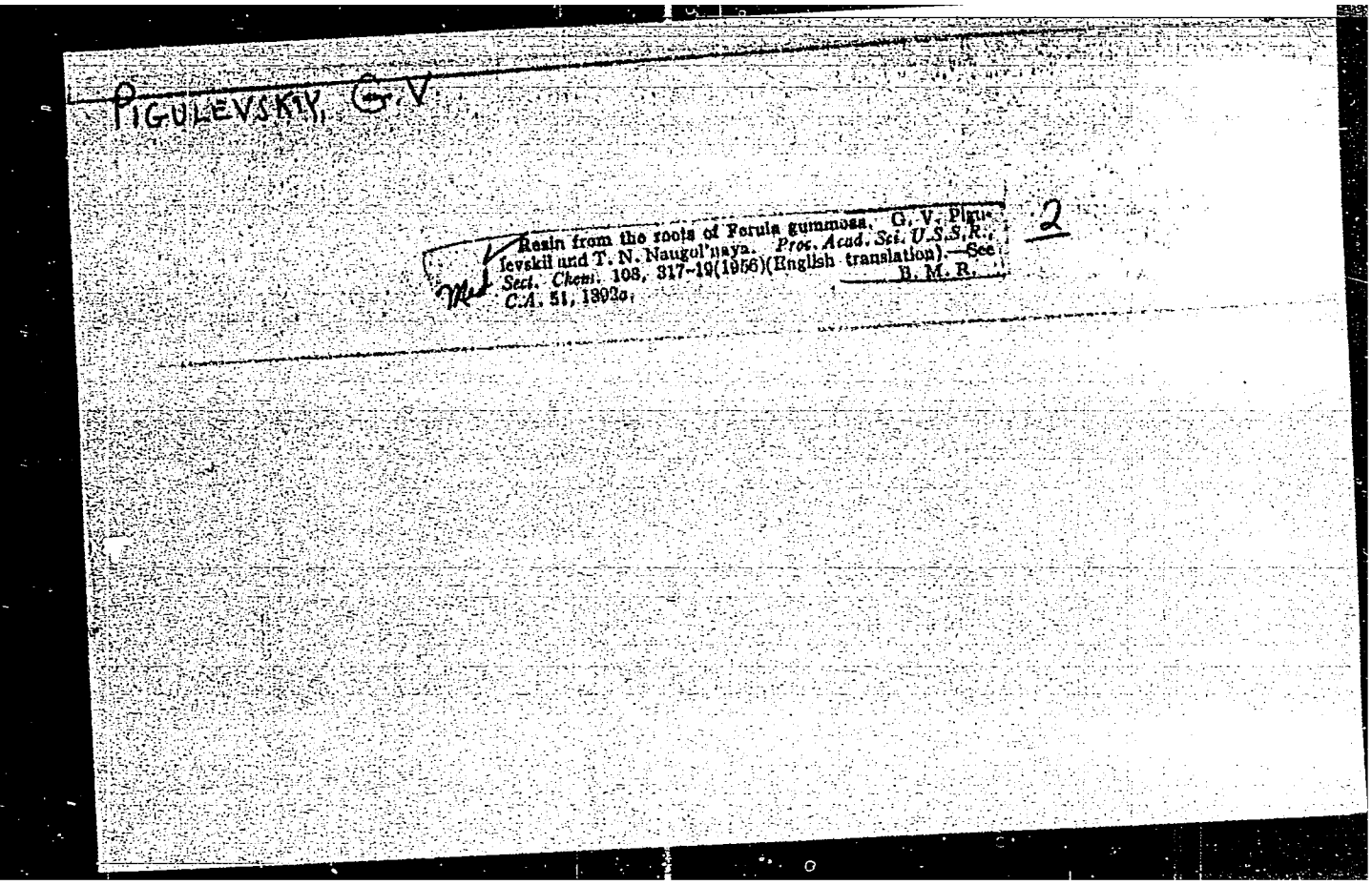

PIGULEVSKIY, G.V.

Resin from the roots of Ferula gummosa. G. V. Pigulevskii and T. N. Naugol'naya. *Pros. Acad. Sci. U.S.S.R., Sect. Chem.* 108, 317-19(1956)(English translation).—See *C.A.* 51, 13930. B. M. R.

2

51-6-19/25

AUTHORS: Pigulevskiy, G. V., and Kozhin, S. A.

TITLE: Pulsating Vibration Frequencies of the Ring in Raman Spectra of Alcohols of the n-Menthane Series. (Chastoty pul'satsionnogo kolebaniya kol'tsa v spektrakh kombinatsionnogo rasseyaniya sveta spirtov ryada n-mentana.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol. III, Nr. 6, pp. 658-659. (USSR)

ABSTRACT: In the study of catalytic hydration of menthene oxides (Ref.1), Raman spectra of secondary and tertiary monocyclic terpene alcohols were obtained. The position of an intense line in the region 700-800 cm^{-1} was of special interest since this line is due to pulsating vibration of a 6-member ring. On comparison of spectra of secondary alcohols (table on p.659) it was found that the position of the pulsating vibration line depends on the spatial distribution of substituents. In the spectra of l-menthol and l-carvomenthol this line occurs at about 770 cm^{-1}.

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Pulsating Vibration Frequencies of the Ring in Raman Spectra of Alcohols of the n-Menthane Series.

In the spectrum of d-neocarvomenthol, this line occurs at 750 cm^{-1}. The corresponding line for d-neodihydrocarveol occurs also at about 750 cm^{-1}. This suggests that of the studied secondary alcohols the neo-alcohols have lower pulsating vibration frequencies. In the infrared absorption spectra of stereoisomeric menthols (Ref.4) a similar behaviour is observed: in the spectra of neo-series alcohols a band of a lower frequency (760-758 cm^{-1}) occurs. The observed behaviour may be explained as follows. In molecules of stereoisomeric menthols and similar secondary alcohols methyl and isopropyl (or isopropenyl) groups occur in positions 1 and 4. Therefore the frequency of pulsating vibration in spectra of these compounds is determined primarily by the special distribution of the hydroxyl group at the second or third carbon atom. This is fully confirmed by the experimental results obtained. In the spectra of neo-series alcohols in which the hydroxyl group is in the axial position, the pulsating frequencies are lower than in the spectra

Pulsating Vibration Frequencies of the Ring in Raman Spectra of Alcohols of the n-Menthane Series.

of alcohols in which the hydroxyl group has the equatorial position. In the spectra of tertiary monocyclic alcohols of terpene series the pulsating vibration lines have considerably lower frequencies (720 cm^{-1}) than in the secondary alcohol spectra. A strong decrease of the pulsating vibration frequency occurs in molecules in which two substituents are present at the same carbon atom. In such cases one of the two substituents and a tertiary carbon atom must occupy the axial position. This disturbs the molecular symmetry and causes a strong decrease in the frequency of the pulsating vibration of the molecular ring. The effects reported in this note may be used in chemical analysis. Some of the spectra were measured by V. G. Kostenko. There is 1 table and 10 references, of which 2 are Russian, 1 English, 3 French, 2 Belgian and 2 of unknown origin.

Card 3/4

51-6-19/25

Pulsating Vibration Frequencies of the Ring in Raman Spectra of Alcohols of the n-Menthane Series.

ASSOCIATION: Leningrad State University. (Leningradskiy gosudarstvennyy universitet.)

SUBMITTED: April 29, 1957.

AVAILABLE: Library of Congress.

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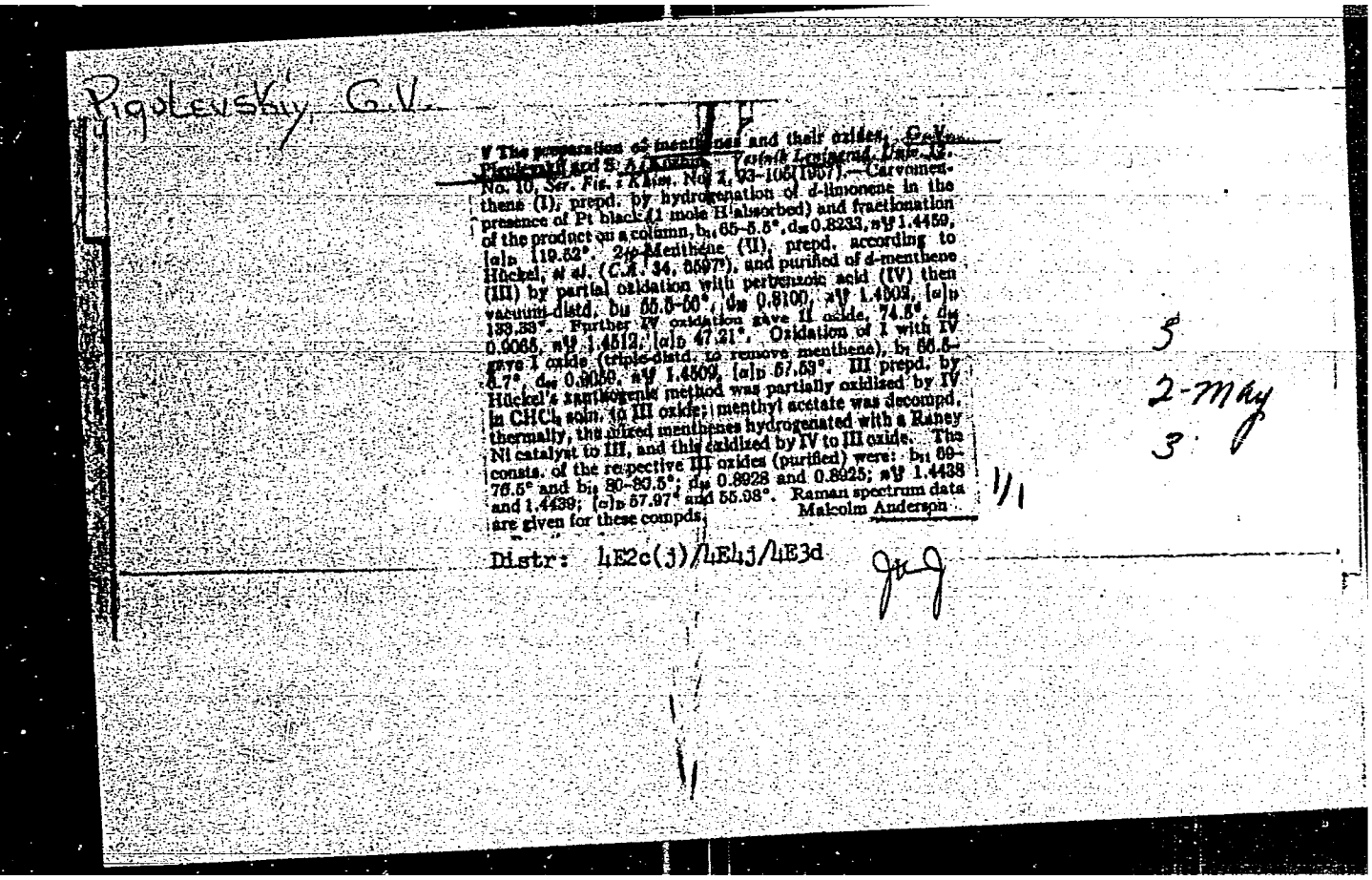

Pigulevskiy, G.V.

TF

The preparation of menthenes and their oxides. G.V. Pigulevskiy and S. A. Kozina. *Vestnik Leningrad. Univ.* 12, No. 10, *Ser. Fiz. i Khim.* No. 2, 93-106(1957).—Carvomenthene (I), prepd. by hydrogenation of *d*-limonene in the presence of Pt black (1 mole H absorbed) and fractionation of the product on a column, b_{11} 65–5.5°, d_4 0.8233, n_D^{20} 1.4459, $[\alpha]_D$ 119.52°. 2(9)-Menthene (II), prepd. according to Hückel, *et al.* (*C.A.* 34, 8597⁹), and purified of *d*-menthene (III) by partial oxidation with perbenzoic acid (IV) then vacuum-distd., b_{11} 66.5–68°, d_4 0.8100, n_D^{20} 1.4509, $[\alpha]_D$ 139.33°. Further IV oxidation gave II oxide, 74.5°, d_4 0.9065, n_D^{20} 1.4512, $[\alpha]_D$ 47.21°. Oxidation of I with IV gave I oxide (triple-distd. to remove menthene), b_{11} 66.5–67° d_4 0.9059, n_D^{20} 1.4509, $[\alpha]_D$ 57.59°. III prepd. by Hückel's xanthogenic method was partially oxidized by IV in $CHCl_3$ soln. to III oxide; menthyl acetate was decompd. thermally, the mixed menthenes hydrogenated with a Raney Ni catalyst to III, and this oxidized by IV to III oxide. The consts. of the respective III oxides (purified) were: b_{11} 66–76.5° and b_{11} 80–80.5°; d_4 0.8928 and 0.8925; n_D^{20} 1.4438 and 1.4439; $[\alpha]_D$ 57.97° and 55.98°. Raman spectrum data are given for these compds. Malcolm Anderson

Distr: 4E2c(j)/4E4j/4E3d

5
2-May
3

AUTHORS: Pigulevskiy, G. V., and Adrova, N. A.

TITLE: Study of Myrcene Dioxide (K issledovaniyu diokisi mirtsena)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 136-137 (U.S.S.R.)

ABSTRACT: During the derivation of monoxide by the oxidation of myrcene with acetyl hydrogen peroxide, the authors obtained a product identified as myrcene dioxide. The formation of the latter is explained as the result of partial polymerization of myrcene and the origination of an active oxygen surplus. Efforts were made to explain the structure of myrcene dioxide and to become acquainted with some of its properties. Optical methods were selected over the chemical ones because the latter have hardly offered any specific results. It was found that one of the oxide rings in the myrcene dioxide is oriented in the same way as in myrcene monoxide; the orientation of the second oxide ring has not been decided. Hydrogenation of myrcene dioxide resulted in the formation of dihydromyrcene dioxide. The hydrogenation was carried out in presence of

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79-2-21/58

AUTHORS: Pigulevskiy, G. V., and Adrova, N. A.

TITLE: Myrcene Monoxide in the Grinard Synthesis (Monookis' mirtsena v sinteze Grin'yara)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, vol 27, No 2, pp. 375-377 (U.S.S.R.)

ABSTRACT: Data are presented on the products obtained from the reaction of magnesium iodomethyl with myrcene monoxide. In order to explain the behavior of myrcene monoxide in the Grignard reaction, it was decided to carry out the reaction with a saturated monoxide figuring it will be possible under these conditions to avoid the effect of the conjugated system of double bonds. The monoxide was hydrogenated in the presence of platinum black. The oxide of tetrahydromyrcene during its reaction with magnesium iodomethyl yielded an unsaturated $C_{11}H_{22}$ hydrocarbon. It was established that the anomalous Grignard reaction is not connected with the presence of a conjugated system. The presence of an isopropylidene group in the synthesized hydrocarbon was confirmed by the large amounts of acetone obtained during the ozonolysis. The results of spectral analysis to which the

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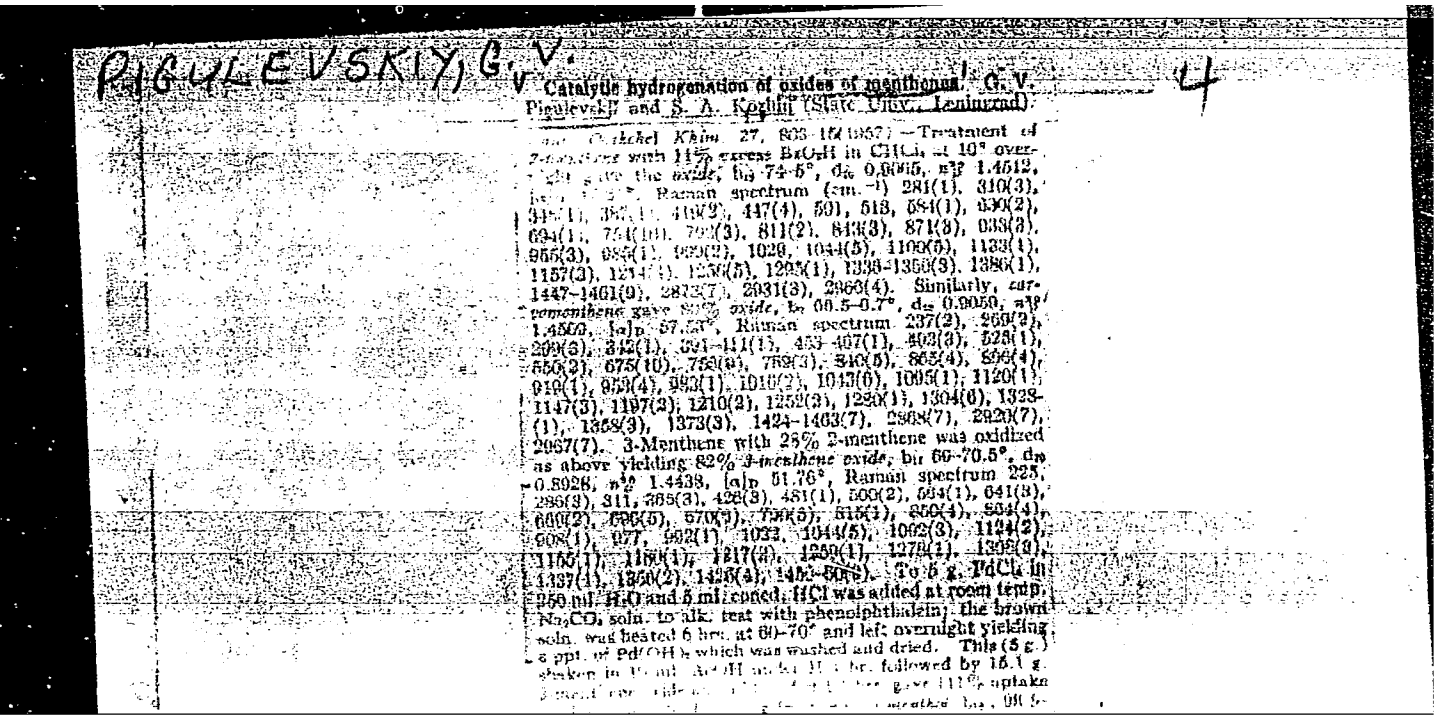

PIGULEVSKIY G. V.

Catalytic hydrogenation of oxides of menthenes. G. V. Pigulevskiĭ and S. A. Koglin (State Univ., Leningrad).

Zhur. Obshchei Khim. 27, 803-10(1957).—Treatment of 2-menthene with 11% excess BzO_2H in $CHCl_3$ at 10° overnight gave the *oxide*, bp 74–5°, d_4^{20} 0.8965, n_D^{20} 1.4512, $[\alpha]_D$ −3.9°. Raman spectrum (cm.$^{-1}$) 281(1), 310(3), 345(1), 357(1), 410(2), 447(4), 501, 518, 584(1), 630(2), 694(1), 734(10), 792(3), 811(2), 843(3), 871(3), 933(3), 955(3), 985(1), 999(2), 1026, 1044(5), 1100(5), 1133(1), 1157(3), 1214(1), 1250(5), 1295(1), 1338-1350(3), 1386(1), 1447-1461(9), 2873(7), 2931(3), 2960(4). Similarly, *carvomenthene* gave 80% *oxide*, bp 66.5–6.7°, d_4^{20} 0.9050, n_D^{20} 1.4500, $[\alpha]_D$ 57.5°, Raman spectrum 237(2), 266(2), 299(3), 342(1), 391–411(1), 453–467(1), 493(3), 528(1), 556(2), 675(10), 752(9), 789(3), 840(5), 863(4), 896(4), 919(1), 959(4), 993(1), 1010(2), 1043(6), 1095(1), 1120(1), 1147(3), 1197(3), 1210(2), 1259(3), 1298(1), 1304(6), 1328-(1), 1368(3), 1373(3), 1424–1463(7), 2868(7), 2920(7), 2967(7). 3-Menthene with 25% 2-menthene was oxidized as above yielding 82% *3-menthene oxide*, bp 66–70.5°, d_4^{20} 0.8926, n_D^{20} 1.4438, $[\alpha]_D$ 61.76°, Raman spectrum 225, 286(3), 311, 365(3), 428(3), 481(1), 500(2), 554(1), 641(3), 660(2), 696(5), 670(9), 736(5), 815(1), 850(4), 894(4), 908(1), 977, 992(1), 1033, 1044(5), 1092(3), 1124(2), 1165(1), 1186(1), 1217(9), 1250(1), 1278(1), 1305(3), 1337(1), 1350(2), 1428(4), 1442–80(8). To 5 g. $PdCl_2$ in 250 ml. H_2O and 5 ml. conc. HCl was added at room temp. Na_2CO_3 soln. to alk. test with phenolphthalein, the brown soln. was heated 6 hrs. at 60–70° and left overnight yielding a ppt. of $Pd(OH)_2$ which was washed and dried. This (5 g.) shaken in [illegible] ml. AcOH under H_2 1 hr. followed by 16.1 g. [illegible] gave 111% uptake [illegible] menthene [illegible], 90 fr-

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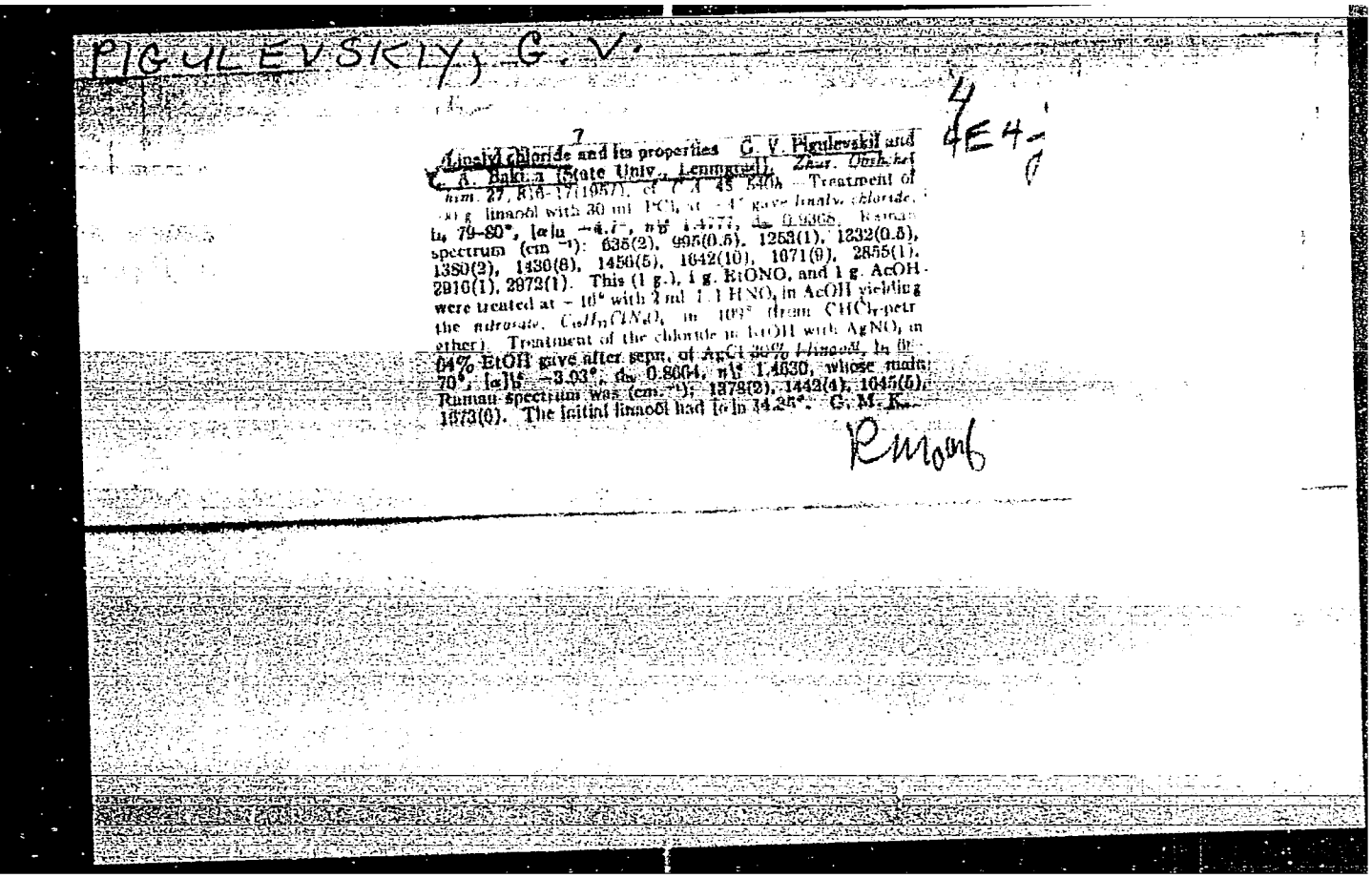
Pu Gulevskii, G.V.; Kozhin, S.A.

$Pd(OH)_2$ in AcOH in H_2 1 hr. followed by addn. of 3 g. carvomenthene oxide and shaking in N 4 hrs. gave a product which formed 60% *d*-carvomenthone semicarbazone and 40% ur.

G. M. Kosolapoff

RW



PIGULEVSKII, G. V.

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Linalyl chloride and its properties. G. V. Pigulevskii and [illegible]. A. Baku State Univ., Leningrad]. Zhur. Obshch. Khim. 27, 856-7(1957). cf. C.A. 45, 5406h. Treatment of 30 g. linaool with 30 ml. PCl3 at -4° gave linalyl chloride, b4 79-80°, [α]D -4.7°, nD20 1.4577, d4 0.9368. Raman spectrum (cm.-1): 635(2), 995(0.5), 1253(1), 1332(0.5), 1380(2), 1430(8), 1450(5), 1642(10), 1071(9), 2855(1), 2910(1), 2972(1). This (1 g.), 1 g. EtONO, and 1 g. AcOH were treated at -10° with 2 ml. 1:1 HNO3 in AcOH yielding the nitrosate, $C_{10}H_{17}ClN_2O_3$, m. 109° (from $CHCl_3$-petr ether). Treatment of the chloride in EtOH with $AgNO_3$ in 64% EtOH gave after sepn. of AgCl 30% linaool, b4 69-70°, [α]D -3.03°, d4 0.8604, nD 1.4630, whose nuclear Raman spectrum was (cm.-1): 1378(2), 1442(4), 1645(6), 1673(0). The initial linaool had [α]D 14.25°. G. M. K.

RMonb

PIGULEVSKIY, G. V

PIGULEVSKIY, G.V.; KOZHIN, S.A.

Preparation of menthenes and its oxides. Vest.LGU 12 no.10:93-105 '57. (MLRA 10:8)

(Methene)

PIGULEVSKIY, G.V.; ADROVA, N.A.

On myrcene dioxide. Zhur. ob. khim. 27 no.1:136-137 Ja '57.
(Myrcene) (MIRA 10:6)

PIGULEVSKIY, G.V.; KOZHIN, S.A.

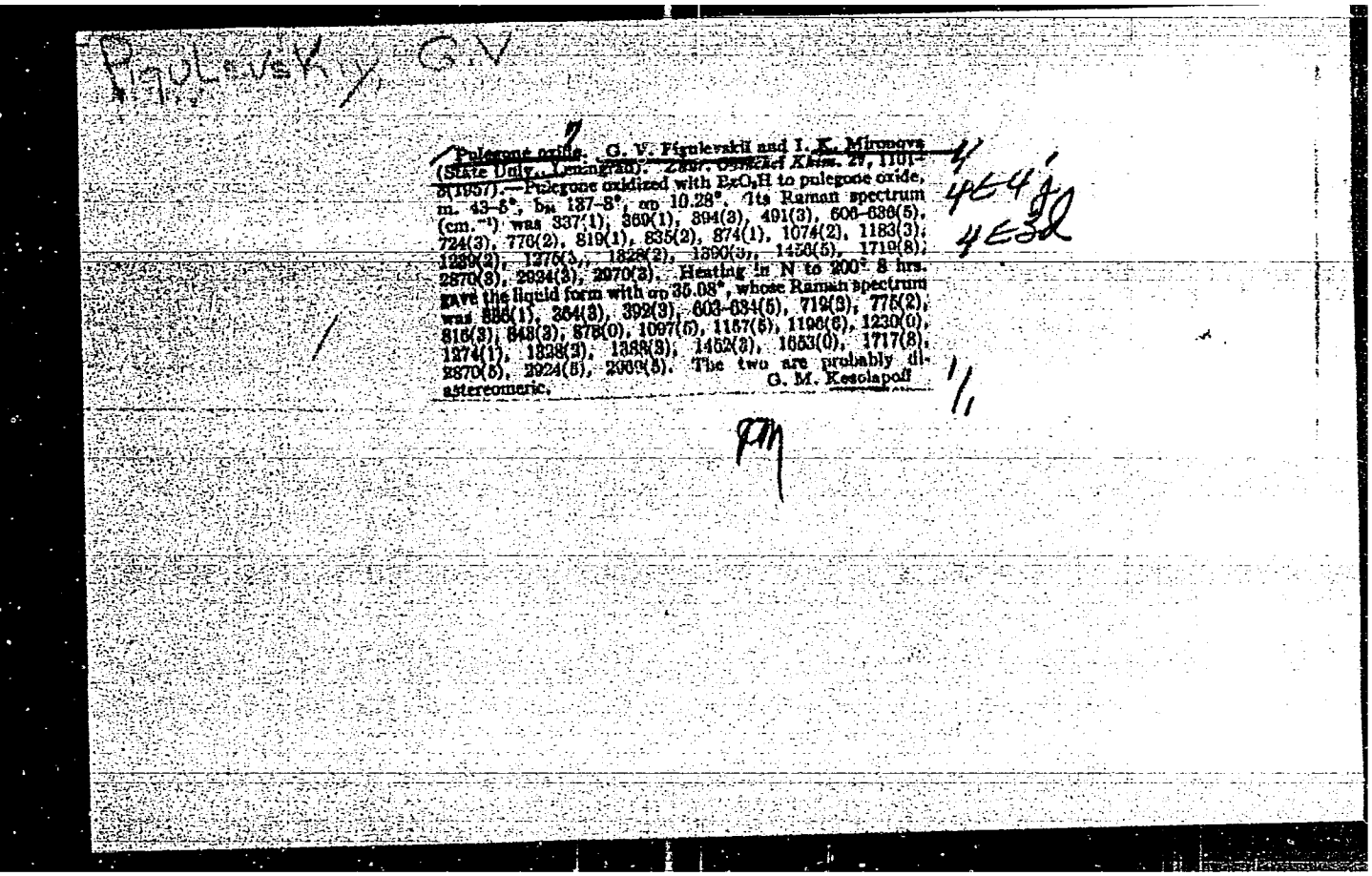
Catalytic hydration of menthene oxides. Zhur. ob. khim. 27 no.3:803-815 Mr '57 (MIRA 10:6)

1. Leningradskiy gosudarstvennyy universitet.
(Carvomenthene) (Menthene)

PIGULEVSKIY, G.V.; BAKINA, L.A.

Linalyl chloride and its properties. Zhur. ob. khim. 27 no.3:816-817 Mr '57. (MLRA 10:6)

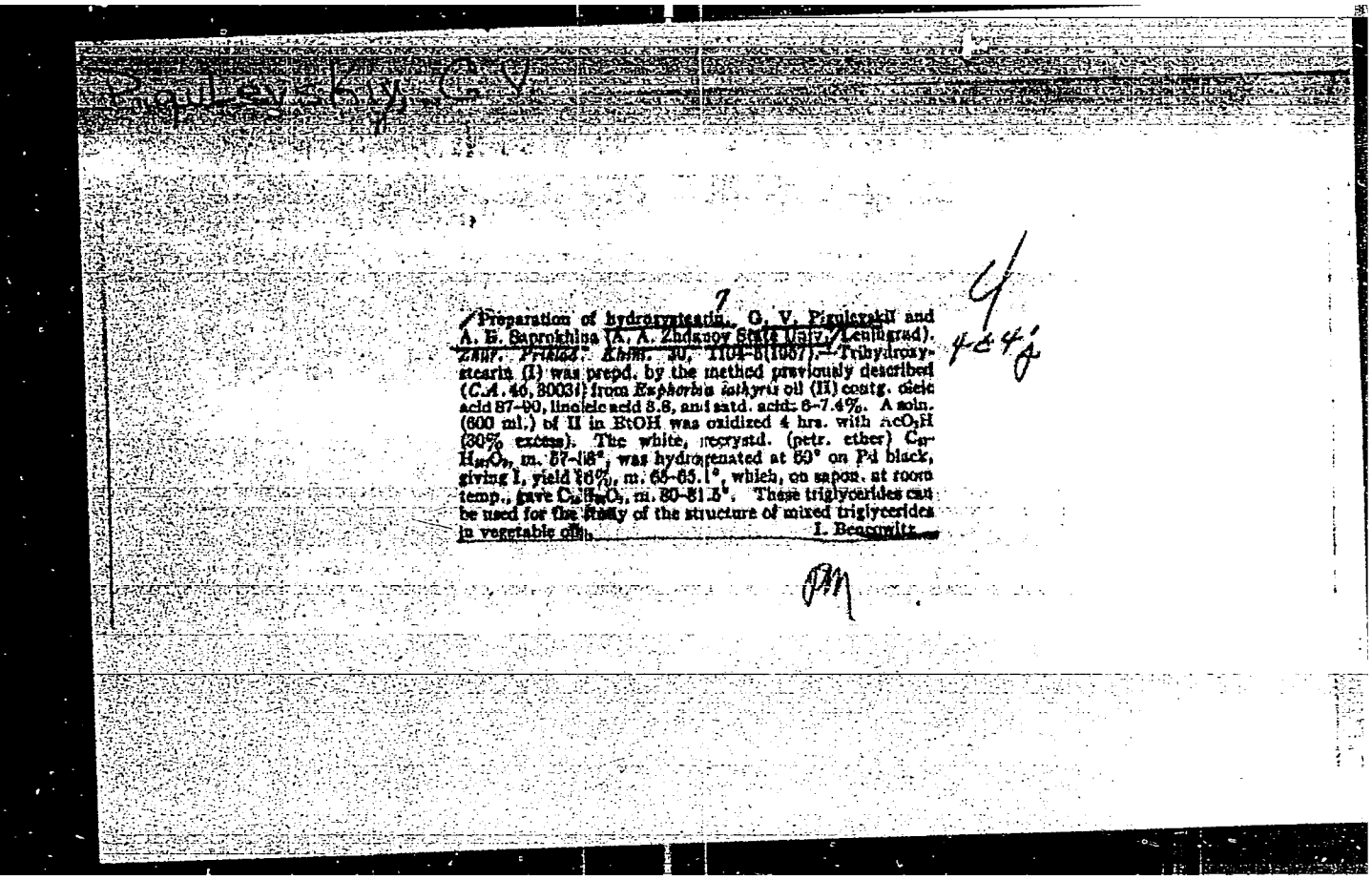
1. Leningradskiy gosudarstvennyy universitet.
(Octadiene)



Pigulevskii, G. V.

Pulegone oxide. G. V. Pigulevskii and I. K. Mironova (State Univ., Leningrad). *Zhur. Obshchei Khim.* 27, 1101-3(1957).—Pulegone oxidized with $PrCO_3H$ to pulegone oxide, m. 43-5°, b_{10} 137-8°, n_D 1.0.28°. Its Raman spectrum (cm.$^{-1}$) was 337(1), 360(1), 394(3), 491(3), 606-636(5), 724(3), 776(2), 819(1), 835(2), 874(1), 1074(2), 1183(3), 1239(2), 1276(3), 1328(2), 1390(3), 1450(5), 1719(8), 2870(8), 2934(3), 2970(3). Heating in N to 200° 8 hrs. gave the liquid form with n_D 1.0.08°, whose Raman spectrum was 336(1), 364(3), 392(3), 603-634(5), 712(3), 775(2), 816(3), 843(3), 876(0), 1097(5), 1167(5), 1196(6), 1230(0), 1274(1), 1338(3), 1388(3), 1452(3), 1653(0), 1717(8), 2870(5), 2924(5), 2969(5). The two are probably diastereomeric.

G. M. Kosolapoff



Preparation of hydroxystearin. G. V. Pigulevskii and A. E. Saprykhina (A. A. Zhdanov State Univ., Leningrad). *Zhur. Prikład. Khim.* 30, 1104-8(1957).—Trihydroxystearin (I) was prepd. by the method previously described (*C.A.* 46, 3003i) from *Euphorbia lathyris* oil (II) contg. oleic acid 87–90, linoleic acid 3.8, and satd. acids 6–7.4%. A soln. (600 ml.) of II in EtOH was oxidized 4 hrs. with AcO_2H (30% excess). The white, recrystd. (petr. ether) $C_{18}H_{36}O_5$, m. 87–88°, was hydrogenated at 60° on Pd black, giving I, yield 86%, m. 65–65.5°, which, on saponn. at room temp., gave $C_{18}H_{36}O_5$, m. 80–81.5°. These triglycerides can be used for the study of the structure of mixed triglycerides in vegetable oils. I. Beregovitz

V5

IL'IN, M.M., otvetstvennyy red.; SHUKHOBODSKIY, B.A., otvetstvennyy red.; VASIL'YEV, V.N., prof., red.; PIGULEVSKIY, G.V., prof., red.; SOKOLOV, V.S., prof., red.; FEDOROV, A.A., prof., red.; BRIKINA, M.A., red. izd-va; PEVZNER, R.S., tekhn. red.

[Present condition and prospects for the study of plant resources of the U.S.S.R.] Sostoianie i perspektivy izucheniia rastitel'nykh resursov SSSR. Moskva, 1958. 510 p. (MIRA 11:9)

1. Akademiya nauk SSSR. Botanicheskiy institut.
(Botany, Economic)

KRUPIN, G.V.; BELYAYEV, I.T.; LAPSHIN, A.A.; GORDEYEV, N.I.; MAR'YANOVSKIY, I.M.; PAVLOV, B.V.; ZHILOV, S.N.; TSYPKIN, S.I.; ANDREYEV, N.N.; KAZIMOROVA, V.F.; KURANOVA, I.L.; PIGULEVSKIY, G.V.

Annotations of the scientific research work performed at the institute in 1957. Trudy LTIKHP 15:213-227 '58. (MIRA 13:4)

1. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti. 2. Kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv (for Krupin, Lapshin, Pavlov). 3. Kafedra ekonomiki i organizatsii proizvodstva (for Belyayev). 4. Kafedra detaley mashin i pod"yemno-transportnykh mashin (for Gordeyev). 5. Kafedra grafiki (for Mar'yanovskiy). 6. Kafedra promyshlannoy teplotekhniki (for Zhilov). 7. Kafedra fiziki (for TSypkin). 8. Kafedra fizicheskoy kolloidnoy i organicheskoy khimii (for Andreyev, Kazimirova, Kuranova, Pigulevskiy). (Refrigeration and refrigerating machinery) (Chemistry, Technical)

79-1-4/13

AUTHORS: Pigulevskiy, G. V., Naydenova, I. N.

TITLE: The Monoxide of Methyllinolate and Its Properties (Monoksid metilovogo efira linolevoy kisloty i yeye svoystva)

PERIODICAL: Zhurnal Obshchey Khimii 1958 Vol.28, Nr 1, pp. 34 - 39 (USSR)

ABSTRACT: On the basis of the described results that the oxidation of methyllinolate with benzoyl-hydrogen-peroxide takes place in steps and that the hydrogenation and bromination of linoleic acid ($C_{14}H_{29}COOH$) takes place in two phases, the authors assumed that the synthesis of the monoxide of this acid could be realized. In order to attain this, methyl linolate was oxidized with acetyl-hydrogen-peroxide. The monoxide is a colorless oil and boils at 173 - 175°C (0,08 mm). Its structure was proved on the basis of the reaction of its oxidation with potassium manganate in an acetone solution. In the case of the presence of its oxide ring of 12 and 13 carbon atoms the oxide of novanic and azelaic acid should be found among the oxidation products (see the process of reaction) in the case of 9 and 10 atoms, however, capronic ($C_{16}H_{12}O_2$) and

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The Monoxide of Methyllinolate and Its Properties

decilic acid. The former were liberated. The authors did not content themselves with this proof. For a final determination of the structure of the monoxide it had to be converted into the hydrated product. For the hydrated oxide has the structure of the oxide of octadecilenic-6-18-acid and should with respect to its properties differ from those of oleic acid (= oxide of octadecilenic-9-acid-18) By saponification of the hydrogenation product an oxide was liberated which differed in everything from that of oleic acid. Thus the methyllinolate possesses the structure of the methylester of [illegible]-oxide-octadecilenic 9-acid 1. By its hydrogenation the oxide of the methyl ester of octadecilenic-6-acid [illegible] ed. It became evident that the double bond of the methyl ester of 12,13-oxide-octadecilenic 9-acid 1 is just as rapidly hydrated as that of Δ^{12}-methyllinolate There are 2 references, 3 of which are Slavic.

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79-1-[illegible]/63

The Monoxide of Methyllinolate and Its Properties

ASSOCIATION: **Leningrad State University**
(Leningradskiy gosudarstvennyy universitet)

SUBMITTED: January 9, 1957

AVAILABLE: Library of Congress

Card 3/3 **1. Chemistry 2. Methllinolate-Chemical properties**

AUTHORS: Pigulevskiy, G. V., Kozhin, S A., Kostenko, V G

TITLE: Reduction of the Monooxide Limonene With the Aluminumhydride of Lithium (Vosstanovleniye monookisi limonena alyumogidridom litiya)

PERIODICAL: Zhurnal Obshchey Khimii, 1958 Vol 28 Nr 5. pp. 1413 1415 (USSR)

ABSTRACT: The catalytic hydration of the a oxides of the terpene series into the corresponding alcohols takes place very difficultly and only with side processes, as was stated already earlier by the authors (Reference 1). The reduction of the oxides with the aluminumhydride of lithium ($LiAlH_4$) offers a more convenient method for transforming a terpene oxides into alcohols, if it is not accompanied by side processes As a basis for the present investigation the monooxide of limonene (Oxyd-1,2 p menthen-8,9) was used which was first synthetized by N. A. Prilezhayev (Reference 2) In the reduction of this oxide with $LiAlH_4$ only alcohols formed, namely, dimethylhydrocarveol

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Reduction of the Monooxide Limonene With the Aluminumhydride of Lithium

of high symmetric purity, and β terpineol. Both alcohols were characterized by corresponding derivatives. Besides, additional combination diffusion spectra were taken. Thus it was found that the reduction of the monooxide of limonene with $LiAlH_4$ with opening of the oxide ring into both directions takes place under the formation of a tertiary alcohol of β terpineol and of a secondary one of d-neodihydrocarveol. In the work by Holub, Herout, Sorm (Reference 6), these authors seem to have neglected this circumstance, namely that in the reduction of the monooxide of limenone, besides β terpineol, also the neodihydrocarveol had formed. There are 10 references, 5 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: May 6, 1957

SOV/79-28-6-5c/63

AUTHORS: Pigulevskiy, G. V., Kozhin, S. A., Kostenko, V. G.

TITLE: On the Problem of the Reduction of 1-Methylcyclohexene-1-Oxide (K voprosu o vosstanovlenii okisi 1-metiltsiklogeksena-1)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1656-1658 (USSR)

ABSTRACT: The reduction of the 1-methylcyclohexene-1-oxide by means of lithiumaluminum hydrate ($LiAlH_4$) published by Mousseron and his collaborators (Musseron) (Ref 1) attracted the attention of the authors who carried out a reduction of 1-limonene monoxide on the same conditions; on this occasion they also obtained a secondary alcohol, the d-neodihydrocarveol of high asymmetric purity besides the only tertiary alcohol of 1-methylcyclohexanol-1 as mentioned by those authors. Both alcohols formed in the same quantities. This somehow unexpected course of reaction caused the authors to check most exactly the data supplied by Mousseron and his collaborators, as they had in view the analogy of the two oxides. The reduction of the oxide of 1-methylcyclohexene-1 was repeated

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On the Problem of the Reduction of 1-Methylcyclohexene-1-Oxide

with special attention being paid to the purity of the initial products. The combination diffusion spectra were used for the characterization of the investigated products. The methylcyclohexene-1 necessary for the production of the oxide was produced by the dehydration of the 1-methylcyclohexanol-1 by means of the p-toluene sulfochloride in pyridine solution; this had a favorable effect on the further course of the investigation (yield 68 %). The investigation of the spectra undoubtedly pointed to the similarity of the synthesized hexene. The oxide of this 1-methylcyclohexene-1, obtained by oxidation with acetylhydrogen peroxide ($CH_3CO-O-OH$) was identical to that synthesized by Mousseron. The results of the reduction of 1-methylcyclohexene-1-oxide with $LiAlH_4$ proved completely the result mentioned in (Ref 1). The only reduction product is the tertiary alcohol of the 1-methylcyclohexanol-1; this could also be supported by spectral analysis by the spectrum line characteristic for tertiary alcohols in contrast to that of secondary ones. Thus the dehydration of 1-methylcyclohexanol-1 by means of p-toluene sulfochloride can be regarded as a convenient method for the synthesis of the individual 1-methylcyclohexene-1.

SOV/79-28-6-50/63

On the Problem of the Reduction of 1-Methylcyclohexene-1-Oxide

There are 6 references, 2 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: May 6, 1957

1. Cyclohexane derivatives--Synthesis

Card 3/3

AUTHOR: Pigulevskiy, G. V., Doctor of Chemical Sciences 30-58-3-18/45

TITLE: Investigation of Natural Compounds in the Czechoslovakian Academy of Sciences
(Izucheniye prirodnykh soyedineniy v Chekhoslovatskoy Akademii nauk)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1958, Nr 3, pp. 84-85 (USSR)

ABSTRACT: The laboratory for natural compounds of the Chemical Institute of the Czechoslovakian Academy of Sciences must be considered as leading in this field. The author visited it recently. This is the merit of the director of the institute: F. Shorm and of its collaborator V. Gerout. The field of sesquiterpenes which is investigated at present, presents great difficulties. F. Shorm showed for the first time that infrared spectra may be used for the characteristics of the fundamental types of sesquiterpenes. The process of chromatography disclosed new prospects with the investigation of ethereal oils. The laboratory developed special micro-processes

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for the investigation of the nature of organic compounds. It proves also successful in the field of the lactams. Much attention is also paid to the methodic problem. V. Gerout developed a method for the separation of terpenes by an absorption-percolation on coal, or silicate respectively. Both microanalytical and physico-chemical laboratories participate in this work as well and the latter has a well equiped spectroscopic cabinet. One of the laboratories of the institute deals with the investigation of albumin and with the problem of brown coal.

PIGULEVSKIY, G.V. ; RZAYEVA, S.B.

Study of fatty oil of silybum marianum Gaertn. Zhur.prikl.khim. 31 no.3:504-506 Mr '58. (MIRA 11:4)
(Fats and oils) (Milk thistle)

AUTHORS: Pigulevskiy, G.V , Kostenko, V G. SOV/54-59-1-23/25

TITLE: Investigation of Silver-fir (Abies Sibirica Ldb Gallipot K issledovaniyu zhivitsy sibirskoy pikhty (Abies sibirica Ldb

PERIODICAL: Vestnik Leningradskogo universiteta Seriya fiziki i khimii, 1959, Nr 1, pp 154-156 (USSR)

ABSTRACT: The bark of the Siberian firs contains in fine channels the gallipot which consists of volatile (like terpene) and non volatile substances. The object of this paper is the investigation of the nonvolatile ingredients which hitherto have been to an only inconsiderable extent investigated Acids were detected in them by the experiments described here: the neoabietic acid (I) and the abietic acid (II) Their chemical structure formulas are given. Furthermore the alcohol abienol was separated as a crystal hydrate from the neutral ingredient of the gallipot The investigation of the structure of abienol will be the object of another paper The analysis yields first the abienol which is an achromatic resinous mass Its quantitative formula is $C_{17}H_{30}O_2$, its constants are n_D^{20} 1.5332, $[\alpha]_D^{20}$ +20 C The most intensive bands of the infrared absorption spectrum and the

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Investigation of Silver-fir (Abies Sibirica Ldb.) Gallipot

SOV/54-59-1-23

ultraviolet absorption spectrum are given. The neoabietic acid was first obtained as salt of the diethyl amine. It was then obtained in pure form by means of boric acid. It has the formula $C_{20}H_{30}O_2$. Its constants are: melting point 179 - 179.5°, $[\alpha]_D^{15}$ 164.4°. The infrared absorption band and the ultraviolet absorption maximum are given. The abietic acid was obtained from the mother solution similarly to the neoabietic acid. Its constants are: melting point 173 - 174.5°, $[\alpha]_D^{16}$ -115.6°. Infrared absorption bands and ultraviolet absorption maximum are given. All data obtained are compared with data from publications. There are 7 references, 6 of which are Soviet.

SUBMITTED: April 10, 1958

Card 2/2

5(3)

AUTHORS: Pigulevskiy, G. V., Kozhin, S. A., Motskus, D. V.

SOV/79-29-6-60/72

TITLE: Reduction of Δ^3-Menthene Oxide by Lithium Aluminum Hydride (Vosstanovleniye okisi Δ^3-mentena alyumogidridom litiya)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 2053-2056 (USSR)

ABSTRACT: The present report contains preliminary results obtained from an analysis of the reduction of Δ^3-menthene oxide by $LiAlH_4$. This oxide, the initial product, was obtained by the oxidation of the mixture of Δ^3-menthene and p-methane with perbenzoic acid. The mixture of these hydrocarbons was prepared by partial hydration of the mixture of Δ^3-menthene and Δ^2-menthene (Ref 5), which for its part resulted from the thermic cleavage of methyl acetate (Refs 5,6). Reduction of menthene oxide was effected with $LiAlH_4$ under standard and more rigorous conditions (at a higher temperature and finally without solvents). In the first case oxidation was not fully accomplished and in the second case it was fully accomplished. The composition of the

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products of reduction of the Δ^3-menthene oxide varies also according to the conditions of the reduction. In all cases the corresponding alcohols result as main products: menthanol-4 and one of the stereoisomeric menthanols-3 of the neo-series, probably neo-isomenthol. During the reduction under standard conditions menthanol-4 (70 % yield) is the main product, whereas in the reduction under more rigorous conditions menthanol-3 (70 %) prevails. Menthanol-4 was characterized by the synthesis of phenyl urethane and by the spectroscopic comparison. For the identification of the secondary alcohol formed in the reduction of Δ^3-menthene oxide, its p-nitro-benzoate was synthesized, which corresponds, according to reference 9, to the p-nitro-benzoate of the dl-neo-isomenthol. In virtue of the results obtained it is assumed that Δ^3-menthene oxide is a mixture of stereoisomers, which due to steric factors may be reduced more or less easily by $LiAlH_4$ and which accounts for the varying composition of the reduction products. Additional, more detailed examinations will follow. There are 10 references, 3 of which are Soviet.

Reduction of Δ^3-Menthene Oxide by Lithium Aluminum Hydride SOV/79-29-6-60 72

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: May 25, 1958

Card 3/3

5 (3)
AUTHORS: Pigulevskiy, G. V., Kuranova, I. L., Shenin, Yu. D.

SOV/79-29-7-77/

TITLE: Reaction of Ammonia With the Oxide of the Petroselaidic Acid (Vzaimodeystviye ammiaka s okis'yu petrozelaidinovoy kisloty)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2449-2452 (USSR)

ABSTRACT: In addition to previous papers (Refs 1, 2) the authors investigated the reaction of ammonia with the oxide of the petroselaidic acid (trans-Δ^6-octadecenoic acid-1). This acid was obtained by elaidination of the petroselinic acid. By oxidation of this acid with peracetic acid the oxide was formed. By reaction of ammonia with this oxide at 130° the oxy-amino-stearic acid was formed, which melted after repeated recrystallization from isoamyl alcohol at 189-190° (in sealed tube) and corresponds with the empirical formula $C_{18}H_{37}O_3N$. It is insoluble in common solvents, sparingly soluble in isoamyl alcohol and soluble only in acids and alkali liquors. According to the structural proofs carried out [oxidation with lead tetraacetate (Ref 3)] formula (I) is assigned to the oxy-amino-stearic acid. It is a stereoisomer of the corresponding oxy-amino acid which results from the oxide of

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Reaction of Ammonia with the Oxide of the Petroselaidic Acid

SOV/79-29-7-77/87

the petroselinic acid. The following derivatives of the oxy-amino-stearic acid which was obtained from the oxide of the petroselaidic acid were synthesized: the hydrogen chloride complex of the oxyamino acid ($C_{18}H_{35}O_3NH_2 \cdot HCl$) and the hydrogen chloride complex of its methyl ester (II). It can be seen from the table that the melting points of the oxy-amino acid and its derivatives which were obtained from the oxide of the petroselinic acid (cis-isomer) are lower than the melting points of the oxy-amino acid and its corresponding derivatives which were produced from the oxide of the petroselaidic acid (trans-isomer). Similar observations were made earlier when comparing the properties of two other oxy-amino-stearic acids which were produced by the authors, accordingly, from the oxides of the oleic acid (cis-isomer) and elaidic acid (trans-isomer) (Ref 1). In both cases the oxy-amino acids are distinguished from one another by their steric configuration. There are 1 table and 8 references, 5 of which are Soviet.

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Reaction of Ammonia With the Oxide of the Petroselaidic Acid

SOV/79-29-7-77/87

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: July 2, 1958

Card 3/3

5(3) SOV/80-32-4-46/47

AUTHORS: Pigulevskiy, G.V., Kuranova, I.L. and Sokolov, E.V.

TITLE: The Interaction of Ammonia With the Oxide of Petroselinic Acid (Vzaimodeystviye ammiaka s okis'yu petrozelinovoy kisloty)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 937-938 (USSR)

ABSTRACT: The authors synthesized the oxyaminostearic acid by means of interaction of ammonia with the oxide of petroselinic acid. On the basis of treatment this acid with lead tetraacetate and the analysis of the products resulting from the reaction, the authors conclude that the oxyaminostearic acid should have the structure of 6-amino-7-oxyoctadeca noic acid-of the following form:

$$CH_3-(CH_2)_{10}-\underset{OH}{CH}-\underset{NE_2}{CH}-(CH_2)_4-COOH$$

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SOV/80-32-4-46/47

The Interaction of Ammonia With the Oxide of Petroselinic Acid

Its melting point is 133 - 134°C. The detailed procedure of obtaining this acid was described in the note.
There are 7 references, 3 of which are Soviet, 2 German, 1 American and 1 French.

SUBMITTED: July 2, 1958

Card 2/2

5.3600

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SOV/80-[illegible]

AUTHORS: Pigulevskiy, G. V., Kostenko, V. G., Andreyeva, L. F.

TITLE: Brief Communications. Preparation of Discrete Linalyl Chloride

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 10, pp 2369-2370 (USSR)

ABSTRACT: Linalool in reaction with PCl_3 gave a mixture of 40% linalyl chloride and 60% geranyl chloride. It is known that lithium aluminum hydride reacts with primary chlorides but does not reduce the tertiary chlorides. Lithium aluminum hydride reacts completely at room temperature with geranyl chloride, forming dihydromyrcene. Linalyl chloride is not reduced in this reaction, and the obtained mixture of linalyl chloride and dihydromyrcene was separated by distillation. Hydrogenation of linalyl chloride and dihydromyrcene shows the presence of two double bonds in the above compounds. This is proof that upon reduction of chloride with lithium aluminum hydride the double bonds do not reduce

Card 1/2

Brief Communications. Preparation of Dis[illegible]
Linalyl Chloride

[illegible]
SOV/[illegible]

and that the chloride does not contain an admixture of [illegible] chlorides. In comparison with geranyl chloride, linalyl chloride has lower specific gravity and smaller refractive index and is optically active. There are 2 figures; 1 table; 7 references, 4 Soviet, 1 U.S., 1 German, 1 British. The U. S. and British references are: I. Frevel, G. Kon, J. Chem. Soc., 3131 (1950); E. Johnson, R. Bleisnard, H. Carmar, J. Am. Chem. Soc., 70, 3664 (1948).

SUBMITTED: December 20, 1958

Card 2/2

5(3) SOV/20-128-2-23/59

AUTHORS: Pigulevskiy, G. V., Kostenko, V. G.

TITLE: Abienol, Its Production and Properties

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 2, pp 305-308 (USSR)

ABSTRACT: An alcohol with an empirical formula $C_{17}H_{28}O$ was isolated from the liquid resin of the silver fir (Abies pectinata D.C.), and called abienol (Ref 1). Its crystallohydrate with water melts at 62°. The autnors isolated from among the nonvolatile components of the resin secretion of the Siberian fir (Ab. sibirica Ldb.) (Ref 2) an abienol in the form of abienol hydrate corresponding to the one mentioned in reference 1 (Table 1). It was different in the following points: it was crystalline, with a melting point at 40-42°, and had a higher optical rotation activity. Contrary to the data (Ref 1) abienol and abienol hydrate contain 2 double bonds each. Hydrating of the 1st double bond proceeds much faster than that of the 2nd one. This points to their different character. The infra-red spectra (Fig 1) of the abienol hydrate showed 2 bands cor-

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responding to the valence vibrations of C=C: 1600 cm^{-1} and 1642 cm^{-1}. This can be explained by the presence of conjugate double bonds. This is also confirmed by the ultraviolet spectrum. Both in abienol hydrate and in abienol, the groups CH_2 and CH_3 were detected spectroscopically. It is very probable that abienol hydrate contains the group $-CH=CH_2$. The abienol hydrate isolated by the authors loses water at 90-95° on heating in the vacuum, and is transformed to abienol. When the latter is dissolved in alcohol, a white precipitation is formed. It is amorphous and melts at 115-120°. It is an abienol polymer $(C_{17}H_{28}O)_x$. Visible light is also capable of effecting this polymerization. With these results, the contradictory data of reference 1 become evident: a partially polymerized abienol was present there. The statement saying that abienol hydrate cannot be obtained from abienol by treatment with 96% ethanol was also refuted by the authors. Thus, the transformation of abienol hydrate to abienol, and vice versa, is not accompanied by any structural changes in the molecule (except for polymerization). There are 1 figure, 1 table, and 5 ref-

erences, 2 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

PRESENTED: May 11, 1959, by B. A. Arbuzov, Academician

SUBMITTED: May 6, 1959

7c319

5.3400

AUTHORS:

TITLE:

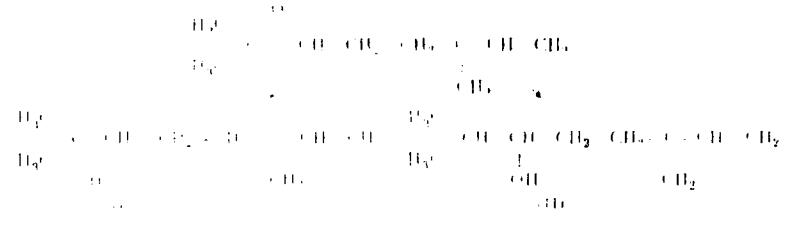
PERIODICAL:

ABSTRACT:

Card 1

Reduction [illegible]
Octadiene [illegible]

7-31
SOV, 7-[illegible]



ASSOCIATION: [illegible]

SUBMITTED: April [illegible], 1
Card 2/2

...CO

AUTHORS: Pivovarskiy, I. T., ...

TITLE: Letters to the Editor ... Author ... Title of Article

PERIODICAL: Zhurnal obshchey ..., ... Vol. ..., Nr 2, ... (...)

ABSTRACT: The authors report that the empirical formula of ..., suggested by H. Wieland and R. Mücke (Ber., ..., (1942)) is in disagreement with the results of ... of abienol and its derivatives separated from Abies sibirica Ldb. The authors suggest a new empirical formula for abienol and its derivatives (see Table) and consider abienol to be a ... There are 1 table; ... references, 1 German, ... Slovak, ... Soviet.

ASSOCIATION: Leningrad State University (Leningradskiy gosudarstvennyy universitet)

SUBMITTED: November ..., ...

Card ...

S.[illegible]

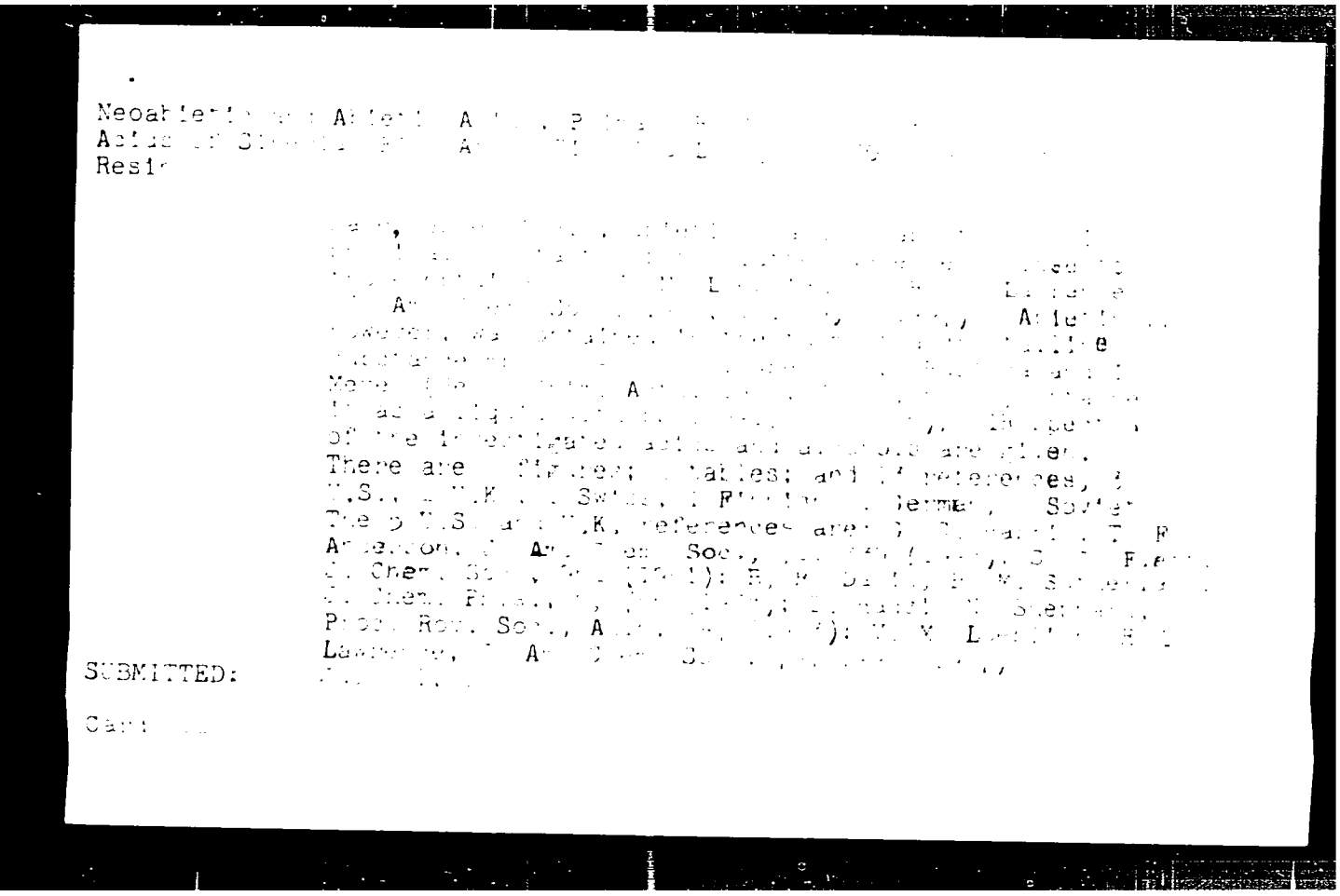
AUTHORS: [illegible]

TITLE: [illegible]

PERIODICAL: Zhurnal prikladnoy khimii, 19[illegible], Vol. [illegible], No. [illegible], pp [illegible] (USSR)

ABSTRACT: Siberian fir is used in USSR as a source of an essential oil containing bornyl acetate; it is also used in medicine. The resin is used for the preparation of Canada balsam substitutes. The authors found that similarly to the resin of Abies sectirata D. D. (Ber., 1942, Vol. 75, p. 1[illegible]), the siberian fir resin contains abietic acid (~50%) and [illegible]decabietic acid (5%). The physical constants of acids were close to those [illegible] (J. OK [illegible], Vol. 8, p. 1[illegible]; [illegible], Vol. 10, p. [illegible]; D. D. Harris, T. F. Sanderson, J. Am. Chem. Soc., 1948, Vol. [illegible], p. 3[illegible])

Card 1/[illegible] The [illegible]



SUBMITTED:

PIGULEVSKIY, G.V.; MAKSIMOVA, A.M.

Formation of turpentine. Trudy Bot. inst. Ser. 5 no.66-82 '61. (MIRA 14:7)

(Turpentine)

PIGULEVSKIY, G.V.; KOVALEVA, V.I.

Investigating the essential oil from the fruit of the wild carrot Daucus carota L. occurring in Central Asia. Trudy. Bot. inst. Ser. 5 no.8:15-23 '61. (MIRA 14:7)
(Essences and essential oils) (Tashkent Province--Carrots)

PIGULEVSKIY, G.V.; BELOVA, N.V.

Investigating the essential oil from the fruit of the water parsnip Sium latifolium L. Trudy Bot. inst. Ser. 5 no.8:24-2[illegible] '61. (MIRA 14:7)

(Essences and essential oils)
(Voronezh Province—Water parsnips)

PIGULEVSKIY, G.V.; RAZBEGAYEVA, T.P.

Investigating the essential oil of Caropodium platycarpum Schischk. Trudy Bot. inst. Ser. 5 no.8:28-31 '61. (MIRA 14:7)

(Transcaucasia—Caropodium)
(Essences and essential oils)

PIGULEVSKIY, G.V.; RYSKAL'CHUK, A.T.

Raman spectra of terpenes and their derivatives. Trudy Bot. inst. Ser. 5 no.8:210-239 '61. (MIRA 14:7)
(Terpenes) (Raman effect)

PIGULEVSKIY, G.V.; RYSKAL'CHUK, A.T.

Infrared spectra of compounds contained in essential oils. (MIRA 14:7)
Trudy Bot. inst. Ser. 5 no.8:240-325 '61.
(Essences and essential oils)
(Spectrum, Infrared)

PIGULEVSKIY, G.V.; NOVALEVA, V.I.; BELOVA, N.V.

Some aromatic plants of the Sayans. Trudy Bot. inst. Ser. [illegible] 9: 242-250 '61. (MIRA 15:1)

(Sayan Mountains--Aromatic plants)

PIGULEVSKIY, G.V.; ALEKSANYAN, V.

"The terpenes; spectra and physical constants." Part 1: Sesquiterpenes by J. Pliva, Horak, M., Herout, V., Sorm, F. Reviewed by G.V. Pigulevskii, V. Aleksanin. Opt. i spektr. 11 no.3:434-435 S '61. (MIRA 14:9)
(Terpenes) (Pliva, J.) (Horak, M.) (Herout, V.) (Sorm, F.)

PIGULEVSKIY, G.V.; KOSTENKO, V.G.; MARKUSHKIN, N.I.

Uniformity of the abietinol of Ruzicka and Meyer. Zhur.ob.khim. 30 no.10:3489-3492 O '61. (MIRA 14:4)

1. Leningradskiy gosudarstvennyy universitet.
(Abietyl alcohol)

PIGULEVSKIY, G.V.; KONOKOTINA, A.I.

Reaction of sabinene with peroxyacetic acid. Zhur.ob.khim. 30 no.10:3492-3495 O '61. (MIRA 14:4)

1. Leningradskiy gosudarstvennyy universitet.
(Peroxyacetic acid) (Sabinene)

KUZNETSOVA, G.A.; PIGULEVSKIY, G.V.

Structure of prangenin. Zhur. ob. khim. 31 no.1:323-326 Ja '61. (MIRA 14:1)

1. Botanicheskiy institut Akademii nauk SSSR.
(Prangenin)

PIGULEVSKIY, G.V.; SOKOLOVA, A.Ye.

Reactions of oxides of higher unsaturated acids with lithium aluminum hydride. Part 1: Oxides of oleic and petroselinic acids. Zhur. ob. khim. 31 no.2:652-656 F '61. (MIRA 14:2)

1. Leningradskiy gosudarstvennyy universitet.
(Oleic acid) (Petroselinic acid)
(Aluminum lithium hydride)

PIGULEVSKIY, G.V.; SOKOLOVA, A.Ye.

Reactions of oxides of higher unsaturated acids with lithium aluminum hydride. Part 2: Oxide of methyl erucate. Zhur. ob. khim. 31 no. 2:[illegible] F '61. (MIRA 14:2)

1. Leningradskiy gosudarstvennyy universitet.
(Erucic acid)

PIGULEVSKIY, G.V.; KONOKOTINA, A.I.

Detection of a three-membered ring in terpene compounds by means of infrared spectra. Zhur.ob.khim. 31 no.7:2410-2413 Jl '61. (MIRA 14:7)

1. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova.
(Terpenes—Spectra) (Cyclopropane)

KURANOVA, I.L.; SHENIN, Yu.D.; PIGULEVSKIY, G.V.

Reactions of methyl ester oxide of erucic acid with acetic acid. (MIRA 14:9)
Zhur.ob.khim. 31 no.9:3142 S '61.

1. Leningradskiy gosudarstvennyy universitet imeni A.A.Zhdanova.
(Erucic acid) (Acetic acid)

PIGULEVSKIY, G.V.; KOSTENKO, V.G.; KOSTENKO, L.D.

Ascertaining the structure of abietinol. Zhur.ob.khim. 31 no.9:3143 S '61. (MIRA 14:9)

1. Leningradskiy gosudarstvennyy universitet imeni A.A.Zhdanova.
(Abietyl alcohol)

PIGULEVSKIY, G.V.; KOVALEVA, V.I.

Daucene, a new sesquiterpene hydrocarbon. Dokl. AN SSSR 141 no.6: 1384-1385 D '61. (MIRA 14:12)

1. Botanicheskiy institut im. V.L.Komarova AN SSSR. Predstavleno akademikom B.A.Arbuzovym.
(Sesquiterpene) (Hydrocarbons)

MOKHNACH, Vladimir Onufriyevich; PIGULEVSKIY, G.V., doktor khim. nauk, prof., otv. red.; FEDOROV, Al.A., doktor biol. nauk, prof., otv. red.; BELKINA, M.A., red. izd-va; GALIGANOVA, L.M., tekhn. red.

[Iodine compounds with high polymers, their antimicrobial and therapeutic properties] Soedineniia ioda s vysokopolimerami, ikh antimikrobnye i lechebnye svoistva. Moskva, Izd-vo Akad. nauk SSSR, 1962. 176 p. (MIRA 15:3)
(POLYMERS) (IODINE—THERAPEUTIC USE)

PIGULEVSKIY, G. V.

" The relation between optical activity of terpenes and the systematic classification of plants. "

report submitted for the IUPAC 2nd International Symposium on the Chemistry of Natural Products, Prague Czech., 27 Aug - 2 Sep 62

S/030/62/000/001/006/011
B104/B102

AUTHORS: Fedorov, Al. A., Doctor of Biological Sciences, Pigulevskiy, G. V., Doctor of Chemical Sciences

TITLE: Biologically active substances of vegetable origin

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 1, 1962, 62 - 67

TEXT: In recent years the laboratoriya botanicheskogo resursovedeniya Botanicheskogo instituta im. V. L. Komarova Akademii nauk SSSR (Laboratory of Botanical Resources of the Institute of Botany imeni V. L. Komarov of the Academy of Sciences USSR) and the laboratoriya khimii rastitel'nykh veshchestv (Laboratory of the Chemistry of Vegetable Substances) of the same institute have been investigating "physiologically active substances". Among the natural compounds occurring in plants, substances of the sesquiterpene and triterpene series are of special practical interest. Sesquiterpenes of azulene structure are of great medical importance. Papers by M. M. Goryayev, academician AS Kazakhskaya SSR, as well as Czech and Chinese scientists, showed that azulene compounds can be produced by dehydrogenation from sesquiterpenes obtained

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Biologically active substances ...

from plants of the thistle family. M. V. Nazarenko succeeded in separating guainolide from Artemisia macrocephala Jacq. collected by L. P. Markova and L. I. Medvedeva in the Western Tyan'-Shan. Up to 30% of camazulene is contained in the ethereal oil of this plant. N. P. Kir'yalov succeeded in finding biologically active substances of the sesquiterpene series in several umbelliferous plants; he was able to separate ugamtriol, chimgandiol, angrendiol, and ovindiol. According to M. A. Litvinov's preliminary data, these substances show an antimicrobic effect. N. P. Kir'yalov and T. N. Naugol'naya separated and studied uralenic and meristotropic acids from various forms of Glycyrrhiza collected by T. P. Nadezhina under the direction of Professor M. M. Il'in. Ye. A. Kruganova has studied the acids contained in Pseudoglycyrrhiza A. A. Ryabinin and L. T. Matyukhina found new "al'ninkanon" compounds, besides known triterpenes, in Alnus incana (L). Coumarins and furol coumarins were detected by G. V. Pigulevskiy and G. A. Kuznetsova in the root secretions of Prangos pabularia Lindl. Among these compounds, "prangin" and "prangenin" were found to be new. V. G. Kreyer discovered bergaptene, pimpinellin, isopimpinellin, and sphondin, besides coumarins, in the fruits of Heracleum Sosnowskiy Manden. Yu. A. Dranitsyna discovered five [illegible] of

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B104/B102

Biologically active substances .

the coumarin series. At the Klinika kozhnykh bolezney Voyenno-meditsinskoy akademii nauk im. S. M. Kirova (Clinic for Skin Diseases of the Military Medical Academy of Sciences imeni S. M. Kirov), one of them; "imperatorin" was successfully used for treating vitiligo. Ye. M. Vermel' and S. A. Vichkanova investigated some substances of the coumarin series in cooperation between the Institute of Botany and the Laboratorii Vsesoyuznogo institut lekarstvennykh i aromaticheskikh rasteniy (Laboratories of the All-Union Institute of Medical and Aromatic Plants). N. P. Kir'yalov and S. D. Movchan studied the "resins" of the roots of a number of Ferulae. I. P. Tsukervanik and V. V. Bersutskiy conducted similar investigations in studies organized by the Sredneaziatskiy universitet (Central Asian University). G. V. Pigulevskiy, T. N. Naugol'naya, and N. P. Kir'yalov succeeded in producing galbanic acid (an antibiotic) from the roots of F. Gumosa Boiss. N. P. Kir'yalov and S. D. Movchan separated new coumarin derivatives from the "resins" of the roots of F. samarkandica Korov. I. S. Kozhina separated a polysaccharide from stem and root of Alcea rugosa Alef.; this polysaccharide can be used as blood plasma substitute according to results obtained by the leningradskiy Institut perelivaniya krovi (Leningrad Institute of Blood Transfusion). Smyrnovin

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an alkaloid separated from Smyrnovia turkestana Bge. by A. A. Ryabinin and Ya. M. Il'ina, is a putrescine derivative. In studies conducted at the Kafedra farmakologii Voyenno-meditsinskoy akademii (Department of Pharmacology of the Military Medical Academy), A. I. Kuznetsov and A. D. Panashchenko showed that this alkaloid reduced blood pressure. This preparation was designated "Izoprin" by the Farmakologicheskiy komitet Uchenogo meditsinskogo soveta Ministerstva zdravookhraneniya SSSR (Pharmacological Committee of the Scientific Medical Soviet of the Ministry of Public Health USSR). Its industrial production was assigned to the Leningrad "Farmakon" Plant. G A Denisova and I. B. Sandina are mentioned

PIGULEVSKIY, G.V.; KOSTENKO, V.G.; KOSTENKO, L.D.

Elucidation of the structure of abienol. Zhur.ob.khim. 32 no.2:656 F '62. (MIRA 15:2)
(Alcohols)

PIGULEVSKIY, G.V.; MOTSKUS, D.V.; RODINA, L.L.

Dehydration of carotol. Zhur.ob.khim. 32 no.2:656 F '62.
(MIRA 15:2)

1. Leningradskiy gosudarstvennyy universitet.
(Carotol)

KURANOVA, I.L.; SHENIN, Yu.D.; PIGULEVSKIY, G.V.

Oxides of higher unsaturated acids. Reaction of oxide of erucic methyl ester with acetic acid. Zhur.ob.khim. 32 no.5:1675-1680 My '62. (MIRA 15:5)

1. Leningradskiy gosudarstvennyy universitet.
(Erucic acid) (Acetic acid)

PIGULEVSKIY, G.V.; MOTSKUS, D.V.

Selenane-type sesquiterpene alcohol extracted from essential oils of wild carrots (Daucus carota). Zhur.ob.khim. 32 no.7:2365-2367 Jl '62. (MIRA 15:7)

1. Leningradskiy gosudarstvennyy universitet.
(Sesquiterpenes) (Essences and essential oils) (Alcohols)

KOZHIN, S.A.; YAKIMOVICH, S.I.; PIGULEVSKIY, G.V.

Reduction of pulegone oxide by lithium aluminum hydride. Zhur. ob. khim. 32 no.7:2368-2371 Jl '62. (MIRA 15:7)

1. Leningradskiy gosudarstvennyy universitet.
(Menthenone) (Aluminum lithium hydride)

PIGULEVSKIY, G.V., prof.

Coumarins and furocumarins. Vest.AN SSSR 32 no.7:120-121 Jl '62. (MIRA 15:7)

(Coumarin) (Furocoumarin)

KURANOVA, I.L.; PIGULEVSKIY, G.V.

Preparation of a liquid isomer of methyl ester of linoleic acid dioxide. Zhur.ob.khim. 32 no.10:3455 O '62. (MIRA 15:11)

1. Leningradskiy gosudarstvennyy universitet.
(Linoleic acid)

KOZHIN, S.A.; YAKIMOVICH, S.I.; PIGULEVSKIY, G.V.

Chemical nature of "liquid pulegone oxide."
Zhur.ob.khim. 32 no.10:3455-3456 O '62. (MIRA 15:11)

1. Leningradskiy gosudarstvennyy universitet.
(Menthenone)

PIGULEVSKIY, G.V.; BOROVKOV, A.V.

Isolation of d-β-elemene and l-β-selinene from the essential oil of Libanotis transcaucasica schischk fruits. Zhur.ob.khim. 32 no.9:3106 S '62. (MIRA 15:9)

1. Botanicheskiy institut AN SSSR.
(Elemene) (Selinene)

PIGULEVSKIY, G.V., MOTSKUS, [illegible]

Essential oil of fruits of wild species (Daucus carota) growing in Central Asia. Zhur.prikl.khim. 35 no.5:1143 My '62.

(Essences and essential oils)
(Carrots)

PIGULEVSKIY, G.V.; MOTSKUS, D.V.

Essential oil of fruits of Daucus carota growing in the Ossetian Autonomous S.S.R. Zhur.prikl.khim. 35 no.6:1355-1360 Je '62. (MIRA 15:7)

(Ossetia--Essences and essential oils)

PIGULEVSKIY, G.V.; KOVALEVA, V.I.

New sesquiterpene from essential oil of Artemisia taurica Willd.
Zhur.ob.khim. 33 no.2:705-706 F '63. (MIRA 16:2)

1. Botanicheskiy institut AN SSSR.
(Sesquiterpenes) (Essences and essential oils) (Carduceae)

DANILOVA, A.S.; PIGULEVSKIY, G.V.

Structure of the product of ascaridole thermal isomerization. Zhur.ob.khim. 33 no.6:2076-2077 Je '63. (MIRA 16:7)

1. Leningradskiy gosudarstvennyy universitet.
(Ascaridole) (Isomerization)

PIGULEVSKIY, G. V.

"Concerning oxidation products of unsaturated sebacic acids."

report submitted for 1st World Fat Cong, Intl Soc for Fat Research, Hamburg, W. Germany, 12-18 Oct 64.

PIGULEVSKIY, G.V.; SOKOLOVA, A.Ye.

Catalytic hydrogenation of petroselinic Hydrox: acids. Zhur.prikl.khim. 36 no.2:455-456 F '63. (MIRA 16:3)

1. Leningradskiy gosudarstvennyy universitet.
(Petroselinic acid)

PIGULEVSKIY, G.V.; BOROVKOV, A.V.;

Sesquiterpenes of the essential oil of the fruits of Libanotis transcaucasica schischk growing in various regions of the U.S.S.R. Zhur. prikl. khim. 36 no.4:831-836 Ap '63. (MIRA 16:7)

(Sesquiterpenes) (Essences and essential oils)